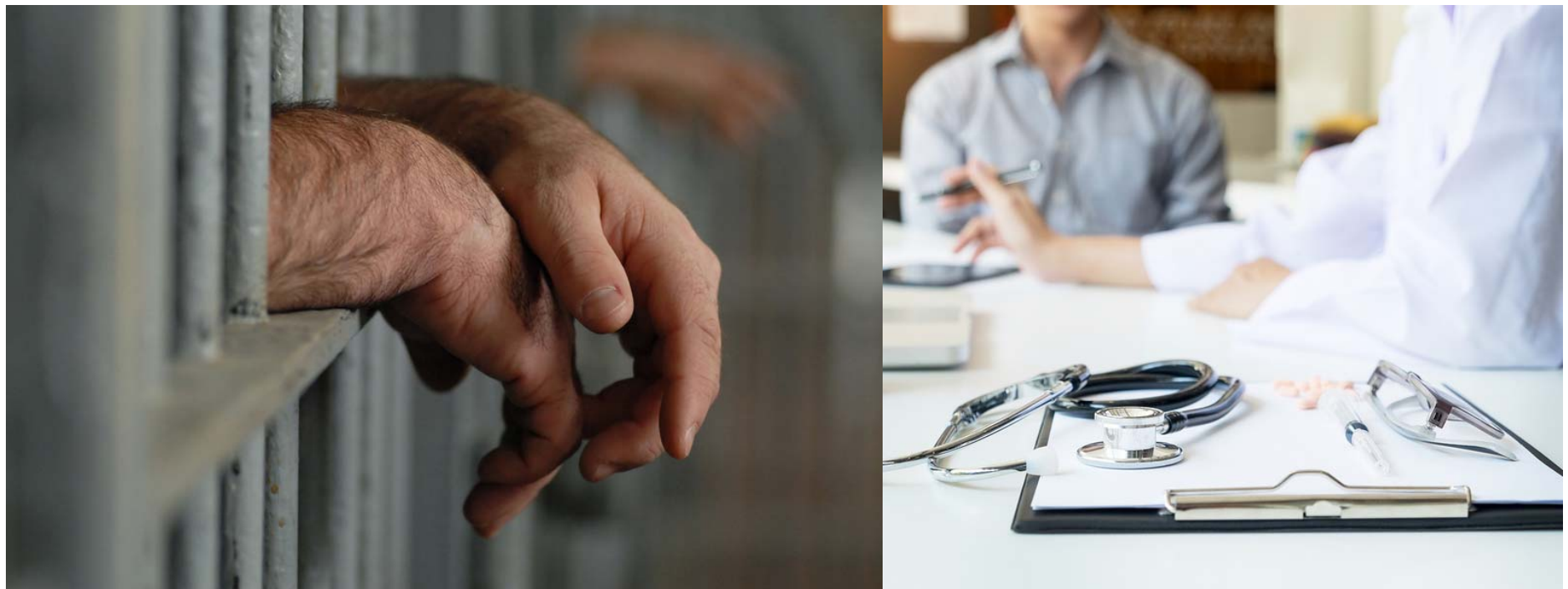


SHORT REPORT

HEALTH CARE IN BELGIAN PRISONS. CURRENT SITUATION AND SCENARIOS FOR THE FUTURE.



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■ SHORT REPORT

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LIST OF ABBREVIATIONS

ABBREVIATION	DEFINITION
ADHD	Attention Deficit Hyperactivity Disorder
ATC	Anatomical Therapeutic Chemical (ATC) Classification System
BMI	Body Mass Index
CHR	Centre Hospitalière Régionale
CI	Confidence Interval
CMC	Medical Centre
CPAS – OCMW	Centre public d'action sociale – Openbaar centrum voor maatschappelijk welzijn
CPT	European Committee for the Prevention of Torture
DG-EPI	Directorate General Penitentiary Services
DGZG – SSSP	Dienst Gezondheidszorg van de Gevangenen – Service des Soins de Santé en
EU	European Union
FPC	Forensic Psychiatric Care Centre
FPS	Federal Public Service
FTE	Full Time Equivalent
GBP	Great Britain pound
GP	General Practitioner
HCV	Hepatitis C Virus
HHRR	Staff/human resources
HIV	Human Immunodeficiency Virus
HR	Hazard Ratio
IGAS	Inspection générale des affaires judiciaires
IQR	Interquartile Range



KB	Koninklijk Besluit
KCE	Belgian Health Care Knowledge Centre
MB	Ministerieel Besluit
MD	Medical Doctor
NHS	National Health Service
OPCAT	Optional Protocol to the Convention against Torture and Other Cruel, Inhuman or
PSD	Psychosocial Service
PY	Prisoner-Year
RIZIV – INAMI	Rijksinstituut voor ziekte- en invaliditeitsverzekering – Institut national d'assurance
RN	Registered Nurse
TBC	Tuberculosis
UK	United Kingdom
WHO	World Health Organization
WIV – ISP	Wetenschappelijk Instituut Volksgezondheid – Institut Scientifique de Santé



1. INTRODUCTION

1.1. Background

Health care in Belgian prisons has received a lot of attention in past years. Currently the Minister of Justice is responsible for the organization and delivery of health care in prisons, but following the recommendations of the World Health Organization (WHO) it is the political intention to shift this responsibility to the Minister of Social Affairs and Public Health. Both Ministers, together, set up a steering group on penitentiary health care to prepare this transfer. This group requested the Belgian Health Care Knowledge Centre KCE to carry out the present study on Belgian health care services in prisons.

The WHO clearly states that in order to achieve quality prison health care, its provision cannot be isolated from health care in society at large and clearly urges the integration of prison health services into public health services^{1, 2}. As arguments for this integration, the WHO states that 'it is people from the poorest and most marginalized sections of the population who make up the bulk of those serving prison sentences, and many of them therefore have diseases such as tuberculosis, sexually transmitted infections, HIV/AIDS and mental disorders. These diseases are frequently diagnosed at a late stage. In addition, no country can afford to ignore widespread precursors of disease in prisons such as overcrowding, inadequate nutrition and unsatisfactory conditions. [...] 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.' (WHO, Moscow Declaration, 2003¹). In 2013, a WHO expert group² concluded that 'with regard to institutional arrangements for prison health: (i) managing and coordinating all relevant agencies and resources contributing to the health and well-being of prisoners is a whole-of-government responsibility, and (ii) health ministries should provide and be accountable for health care services in prisons and advocate healthy prison conditions. The Expert Group considers that such governance of prison health is in accordance with and supportive of the new

European policy for health, Health 2020, and will lead to better health and well-being of prisoners as part of better public health'.

The WHO states that prison health services should be:

- at least of equivalent professional, ethical and technical standards to those applying to public health services in the community
- integrated into national health policies and systems, including the training and professional development of health care staff
- fully independent of prison administrations (but yet liaise effectively with them), and
- provided exclusively to care for prisoners and never be involved in the punishment of prisoners.

However, the WHO also stresses the importance of a 'whole-of-government approach' to prison health and argues that such an approach in the longer term will bring benefits such as:

- lower health risks and improved health protection in prisons;
- improved health of prisoners;
- improved performance of national health systems;
- improved health of deprived communities;
- improved public health of the whole community;
- improved integration of prisoners into society on release;
- lower rates of reoffending and re-incarceration and a reduction in the size of the prison population; and
- increased governmental credibility based on increased efforts to protect human rights and reduce health inequalities



Independence of the health care staff is seen as essential for a trustful doctor–patient relationship; it is important that the sole and only mission of health personnel in prisons is to care for and advocate the health and well-being of prisoners. An organizational prerequisite for the undivided loyalty of prison health staff to their patients is full professional independence. Health personnel in prisons should act in their professional capacity completely independently of prison authorities and in the closest possible alignment with public health services.

Beside the WHO, other sources also elaborate on the societal benefit of delivering high quality prison health care. For example, Freudenberg³ clearly demonstrated the link between prison health and community health and in a recent review⁴ he found evidence that multidimensional integrated health care interventions not only lead to better prisoner health but also to societal benefits. Furthermore, a recent policy document from England⁵ gave many examples in which a positive return on investment is shown when the health needs of prisoners are managed well (e.g. substance misuse treatment).

A UK evaluation⁶ of the transfer of penitentiary health care from the Ministry of Justice to the Ministry of Health showed that this had led to many improvements and better health care quality.

Several national and international experts in the field and organizations regularly and repetitively commented on the health care provision in Belgian prisons⁷⁻³⁵. Almost all severely criticized it and all urged for a speedy improvement and a transfer of responsibility to the Minister of Public Health.

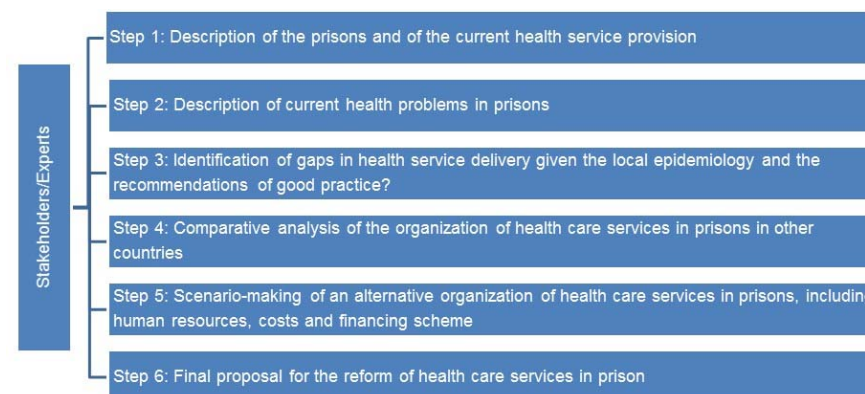
Within this context, the time is ripe for an in-depth independent study of health care services in prisons.

1.2. Aim of the study; outline & methods

The aim of the study was to prepare an actionable reform by means of recommendations^a to policy makers with regard to the transfer of responsibility to the Minister of Social Affairs and Public Health and the reorganization of penitentiary health care. In order to develop our recommendations, an analysis of the medical, organizational, financial, sociological, ethical, and quality aspects of the health care services in Belgian prisons, was performed.

Hereto we followed several steps as outlined in Figure 1.

Figure 1 – Steps in the study



^a Recommendations to the Belgian policymakers based on this research are published as part of the Dutch and French syntheses, which are available on the KCE-website.



The study has been carried out by KCE in cooperation with several external research teams. A mixture of research approaches has been applied, including reviews of Belgian and international literature, questionnaires to medical departments in Belgian prisons, prison site visits, interviews with key informants, international comparison, analysis of electronic medical files, analysis of billing data and invoices, analysis of Belgian legislation, stakeholder consultations and expert meetings.

Given the challenges experienced through our research in identifying and accessing data, a conscious decision was made to focus as much as possible on the year 2015 for all data analyses provided here.

Full details of the methods and results can be found in each of the chapters of the scientific report³⁶⁻⁴⁵. Table 1 below provides a general overview of the applied methods.

Table 1 – Overview of applied methods and sources

Item	Methods/sources
General prison population	Annual reports of the Directorate General of Penitentiary Services (DG-EPI) ⁴⁶⁻⁴⁹ Analysis of the administrative database of prisoners 'Sidis Suite' managed by the DG-EPI for the daily organization of the prison population Interviews with staff members in the central medical service 'Dienst Gezondheidszorg van de Gevangenen/Service des Soins de Santé en Prison' (DGZG/SSSP), organized within the DG-EPI
Health problems in (Belgian) prisoners	Analysis of the electronic medical files of prisoners (Epicure ^b dataset, 1 year period, n = 26,511 prisoners) Literature reviews (international and Belgian) (n = 101 systematic reviews + 65 primary Belgian studies) International comparison (n = 4 countries: France, Scotland, Switzerland, the Netherlands)
Health care use in Belgian prisons	Analysis of the electronic medical files of prisoners (Epicure dataset, 1 year period, n = 26,511 prisoners) Analysis of health care-related invoices to DG-EPI
Organization of health care in Belgian prisons	Questionnaire to all prison medical directors (response rate = 26/35) Literature review Site visits (n = 7)

^b Epicure is the program with the electronic medical files of the persons in prison. Epicure contains the notes made by the health care services (medical doctors, nurses, dentists and other health professionals) at each encounter

with the patient in prison (Epicure does not contain information about health care encounters outside prison, e.g. during external consultations or hospitalisations).



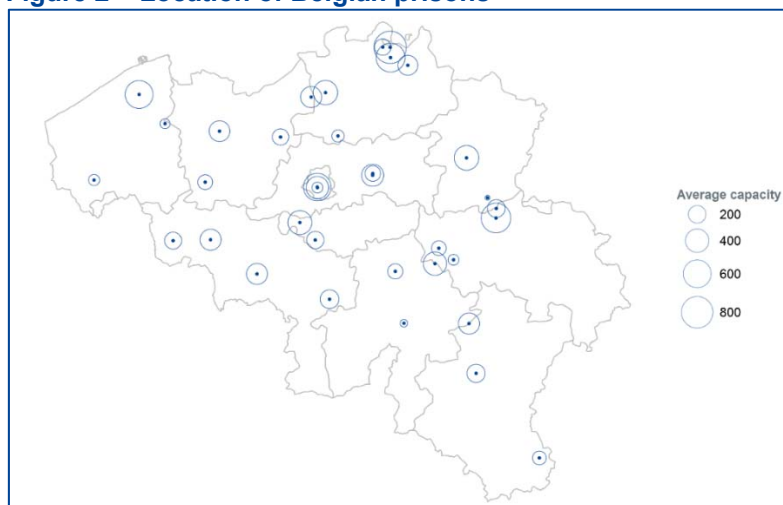
	Interviews with key informants (SWOT analysis) (n = 19) Expert meetings (n = 6 meetings)
Organization of health care in prisons in other countries	International comparison (n = 4 countries)
Costs of health care in Belgian prisons	Analysis of health care-related invoices to DG-EPI Interviews with staff members in the central medical service DGZG/SSSP DG-EPI annual reports
Legal background related to health care in prisons	Analysis of the Belgian legislation Expert meetings (n = 2 meetings, n = 15 experts) Interviews with key informants (n = 10)
Future organization of health care in Belgian prisons	Stakeholder and expert consultations (3x) (n = ca. 200 persons) Interviews with staff members in the central medical service DGZG/SSSP Site visits (n = 8)



2. CHARACTERISTICS OF THE BELGIAN PRISON POPULATION

According to the annual report of the DG-EPI there were 35^c prisons in Belgium in 2015 (17 in the Flemish region, 16 in the Walloon region, and 2 in the Brussels region)⁴⁹. Part of the prisoners registered in the Wortel prison were in fact jailed in Tilburg, in the Netherlands (this ended in December 2016).

Figure 2 – Location of Belgian prisons



Some prisons welcome primarily convicted prisoners, and others have a majority of accused individuals or combine both convicted and accused individuals. Nineteen prisons also have mentally ill offenders^d who, in the case of 12 prisons, are located in psychiatric annexes. Over the year 2015, the average number of prisoners was 11,040, among whom 31.7% were accused, 58.5% were convicted and 8.2% were mentally ill offenders⁴⁹. The latter number is decreasing within prison walls in recent years (1,088 in 2014, 904 in 2015 and 750 in September 2016^e), and is expected to further decrease when new Forensic Psychiatric Care Centres (FPC) will open in coming years, as mentioned in Masterplan 3 of the Minister of Justice, accorded in November 2016^f. The mean daily prison capacity in 2015 was 10,028 and the mean daily population was 11,040; the average overpopulation was 10.1% in 2015, but was highly variable from prison to prison (from -7% to +37%)⁴⁹.

^c There is some inconsistency in the way the number of prisons is reported. In most cases, the figure most often reported (35) counts the Forest and Berkendael prisons as one prison. However, when individual prison statistics are reported, these prisons are separated, resulting in an overall number of 36 prisons.

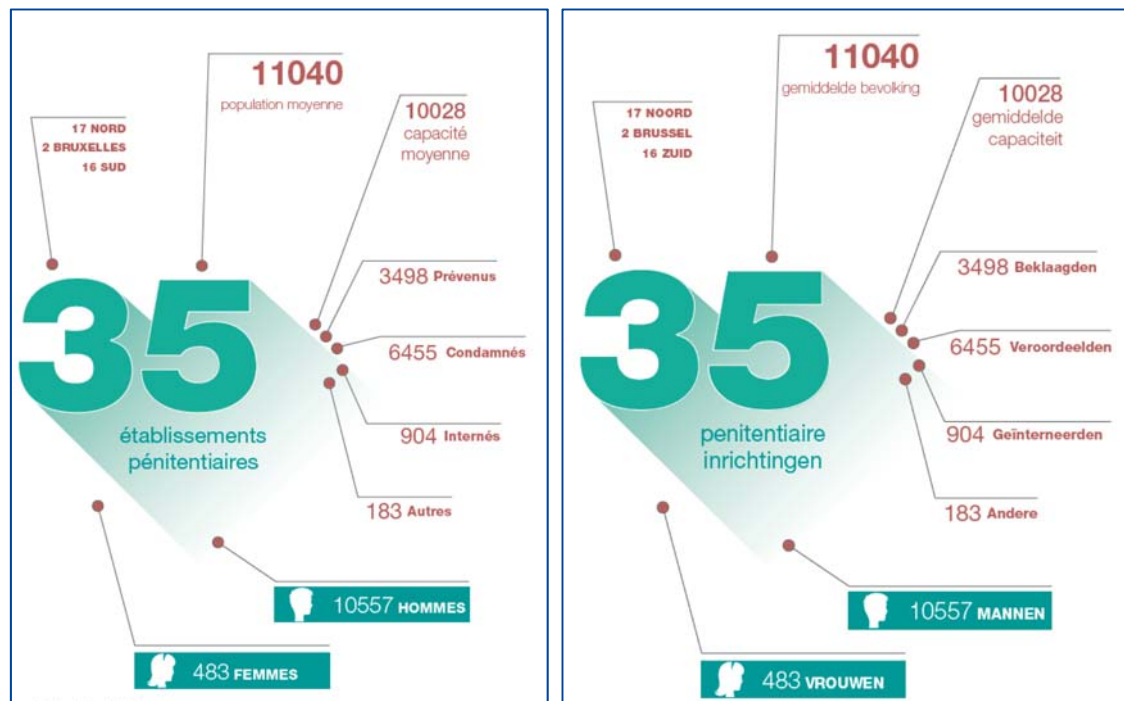
^d Also frequently mentioned by the term 'geïnterneerden' in Dutch and 'internés' in French, and meaning persons who committed a criminal act but are not held criminally liable for their acts due to their mental illness.

^e <http://www.dekamer.be/kvvcr/showpage.cfm?section=grva&language=nl&cfm=grvaXml.cfm?legislat=54&dossierID=54-B096-866-1494-2016201712669.xml>

^f <https://www.koengeens.be/news/2016/11/18/masterplan-gevangenissen-en-internering-goedgekeurd>



Figure 3 – Belgian prison population in 2015



Source: DG-EPI (2016), Annual report 2015, p. 6

Of the prisoners in 2015 44.4% had a foreign nationality, and 16.7% had no residence permit; approximately 10% of the prisoners could not speak French, Dutch, German, English or Spanish. In 2015 there were prisoners from over 130 countries, meaning there is a culturally diverse population in Belgian prisons. The main foreign countries of origin were Morocco (9.8%), Algeria (5.4%), Romania (3.6%), the Netherlands (2.9%) and France (2.2%).

The large majority (95%) are men and two thirds are younger than 40 years.



Based on the Sidis Suite^g, 26,511 persons stayed in prison for at least one night in the period from 4 April 2015 to 4 April 2016 (hereafter called the observation year), totalling 4,037,141 nights or 11,060 prisoner-years^h. During this period, 14,435 new prisonersⁱ entered and 13,458 persons left prison. Nearly 50% of prisoners stayed less than three months in prison during the observation year (Table 2). This figure was even higher for new prisoners: 14.5% stayed less than one week and 56% stayed less than three months in prison, meaning a high turnover. Also, prisoners are frequently transferred from one prison to another: for those 26,511 prisoners 35,377 prison-periods were registered. During the observation year, 12.3% were incarcerated in two different prisons, and 2.3% in three prisons.

Table 2 – Time spent in prison during the observation year (4 April 2015 to 4 April 2016)^j

Time spent in prison during the observation year	% (N=26 511)
< 1 week	9.6
< 3 months	47.5
3 months-< 6 months	17.05
6 months-< 9 months	8.4
>= 9 months	27.3
12 months	18.2

^g 'Sidis Suite' is an administrative database of prisoners managed by the DG-EPI for the daily organization of the prison population

^h A prisoner-year is a measurement which takes into account both the number of people in prison and the amount of time each prisoner spends within prison walls in order to estimate a 'mean population per year'; it is calculated as the total days spent in prison by prisoners/365 days

ⁱ A new prisoner is defined as a person who entered prison in the period 4 April 2015 to 4 April 2016 and who stayed at least one night in prison

3. HEALTH PROBLEMS IN THE PRISON POPULATION

We aimed to take a 'photograph' of the actual health care problems in Belgian prisoners. Therefore we analysed the Epicure database and recent Belgian documents. In addition we compared these findings with international publications. For a complete overview of the literature review see Appendix 3³⁸ and the complete analysis of Epicure in Appendix 2³⁷.

Epicure is the program with the electronic medical files of the persons in prison. Epicure contains the notes made by the health care services (medical doctors, nurses, dentists and other health professionals) at each encounter with the patient in prison (Epicure does not contain information about health care encounters outside prison, e.g. during external consultations or hospitalizations). Although professionals are supposed to enter a reason for contact each time, i.e. health problem, and register the actions that they have carried out related to that problem, it appeared that (diagnosis) data were entered very often in a non-systematic way and in a 'free-text' format; this made it impossible to analyse the nature and epidemiology of health problems for which a health professional was contacted. In contrast, the degree of completeness and accuracy of medication prescription data is deemed high as the coding in Epicure is a necessary step for ordering and distributing medications to prisoners. Subsequently, we assessed the proportion of prisoners being treated for health conditions which could be identified with a high specificity by ATC^k

^j This length of observed prison stay in 2015 does not equal the length of condemnation; e.g. a person who was already in jail for three years before 2015 and was released within one week after our observation started was classified as '< 1 week' and conversely some prisoners who stayed 12 months in our observation period are probably staying longer after the observation period ended.

^k The Anatomical Therapeutic Chemical (ATC) Classification System is used for the classification of active ingredients of drugs according to the organ or system on which they act and their therapeutic, pharmacological and chemical properties



codes^{50, 51}. As the health problems selected were serious long-lasting conditions (except anxiety), one single medication prescription was deemed sufficient to ascertain the disease, independently of treatment duration. Although this approach could not be used to calculate incidence or prevalence rates, it is useful to assess variations in prescriptions and to analyse the determinants of such variations.

From 4 April 2015 to 4 April 2016, 203,903 prescriptions were issued for a total of 11,060 prisoner-years. There were 10,473,550 treatment days, i.e. 1,019 treatment days per person-year. In comparison, in the general population in 2013, this figure was 459⁵². The most prescribed ATC1 category was medications for the nervous system with 43.3% of the prescriptions, and 58.8% of prisoners received at least one prescription from

that group during the observation year (76.4% for those who stayed 12 months in prison during the observation year). These percentages were very similar for mentally ill offenders and for other prisoners. The other frequent ATC1 categories were medications for digestive tract & metabolism disorders, medications for the musculoskeletal system, medications for the respiratory system and medications for the digestive tract (Table 3). Overall, 21.5% of prisoners did not receive any medication (5.8% in those who stayed 12 months during the observation year).

For illustration purposes the percentage of treatment-days in the general population is also presented in Table 3.

**Table 3 – Medication prescriptions per ATC-class in prisons and in the general population**

ATC1 class	% of prescriptions (N = 203 903)	% of treatment-days (N = 10 473 550)	% treatment-days in the general Belgian population in 2013 (RIZIV – INAMI) ⁵²	% of prisoners with at least 1 prescription	% of prisoners that stayed 12 months in the observation year with at least 1 prescription
Nervous system <i>Including medications targeting:</i>	43.3	53.2	11.5	58.8	76.4
• Anxiety or sleep disorder				30.6	38.1
• Depression				25.4	31.5
• Psychosis				21.2	30.5
• Opioid dependence				7.3	6.9
Respiratory system <i>Including medications targeting:</i>	13.8	9.1	8.7	35.4	60.6
• Asthma/Chronic Obstructive Pulmonary Disease				8.4	14.9
Musculoskeletal system	12.3	2.6	5.0	39.0	
Digestive tract & metabolism <i>Including medications targeting:</i>	11.3	14.0	13.5	33.9	
• Diabetes				2.6	
Anti-infectives for systemic use <i>Including medications targeting:</i>	6.3	2.2	2.5	25.0	47.3
• HIV				0.4	0.5
• Tuberculosis				0.5	1.1
• HCV				0.1	0.3
Dermatologicals	4.5	2.0	0.5	18.8	35.2
Cardiovascular system	3.77	10.3	38.5	13.4	21.7
Sensory organs	1.33	0.5	1.6	6.9	14.6
Systemic hormonal preparations (excl. sex hormones & insulin)	1.26	0.9	3.6	3.7	8.8



Blood & blood forming organs	1.15	3.0	8.6	5.7	9.8
Genitourinary system & sex hormones	0.59	1.6	4.9	3.1	5.3
Antiparasitic products, insecticides & repellents	0.18	0.0	0.0	1.2	1.7
Antineoplastic & immunomodulating agents	0.15	0.4	1.0	0.6	0.9
Other	0.01	0.0	0.0	0.1	0.3

The proportion of prisoners receiving at least one prescription for a health condition that could be identified with a high specificity by ATC codes were as follows: anxiety (30.6%), depression (25.3%), psychosis (21.2%), pulmonary obstructive disease (8.4%), hypertension (8.2%), opioid dependence (7.3%), diabetes (2.6%), HIV (0.4%), HCV (0.1%) and tuberculosis (0.5%) (Table 3). We observed large variations in the proportion of prisoners being prescribed a given treatment¹ across prisons, even after adjustment for the effect of covariates (age, sex, nationality, residency entitlement, language, length of stay in prison and legal status).

As expected, the figures were somewhat higher for prisoners who stayed in prison for a whole year.

For infectious diseases, the figures were much higher than in the general Belgian population. For example, regarding HIV, there were 15,266 patients with a medical follow-up in Belgium in 2015, which corresponds to a proportion of 0.00171% of the adult population⁵³, while in the prison population, this proportion was approximately 0.42%.

From the literature review of Belgian documents (a.o.⁵⁴⁻⁷⁰), it appeared that many prisoners have a poor general health condition and that certain conditions are highly prevalent in Belgian prisons, such as infectious diseases, mental health problems and substance use/addiction. Although prevalence rates of these conditions vary from one study to another (depending on the sample characteristics and measurement method), all Belgian studies are univocal that the prevalence rates of health problems are (much) higher in comparison to what could be expected in comparable populations in the general population.

For illustration purposes, results from a recent study⁷⁰ in Flemish prisons, in which they also made a comparison to the general Belgian population, is presented in Table 4 below.

¹ It is important to note that therapy prevalence is not equal to disease prevalence; some prisoners might have a particular condition (known or unknown) but do not receive medication for it or receive a non-pharmacological therapy



Table 4 – Self-reported health problems in prisoners and in the general Belgian population (Vyncke et al. 2015 ⁷⁰)

Health problem	Prisoners	General Belgian population Based on the 2008 WIV – ISP- health questionnaire ⁷¹ or Swing study ⁷²
In good health	51.2%	74.1%
Chronic disease	35.7%	30.9%
Diabetes	7%	5.7%
Hypertension	21.8%	17.9%
Airways	18.4%	NR
SOA	2.6%	NR
Pain	69.6%	52.4%
Overweight (BMI ≥ 25)	50.5%	31.1%
Sleeping problems	55.3%	22.5%
Suicidal thoughts, ever	37.6%	11.7%
Suicidal thoughts, in the past year	20.3%	3.8%
Suicide attempt, ever	22.9	4.5%
Suicide attempt, in the past year	6%	0.4%
Smoker	69.6%	23.6%
Experienced stress score (mean)	8.4	7.8
Feelings of anxiety (mean)	8.5	NR
Feelings of depression (mean)	7.6	NR
Loneliness score (mean)	2.42	1.45

These ‘Belgian’ findings are completely in line with foreign studies in prison populations, as shown by the international comparison with France, Scotland, Switzerland and the Netherlands, and from the literature review. For example, systematic reviews found that:

- prisoners reported poorer perceived health than their non-incarcerated counterparts⁷³
- infectious diseases, addictions and mental health problems have a higher prevalence in prisons than in the general population⁷⁴
- the rate of TB infection could be five to 83 times higher in prisons than in the general population⁷⁵
- high prevalence of HIV⁷⁶
- high prevalence of hepatitis C⁷⁷
- the oral health of prisoners as measured by clinical indices and self-report measurements is poor, and is consistently poorer when compared with an age/ethnic matched population⁷⁸
- the prevalence of substance abuse disorders is much higher in prisoners than in the general population^{79, 80}
- high prevalence of intellectual disability, attention deficit hyperactivity disorder (ADHD), psychotic disorders, bipolar disorders, depression, anxiety disorders, obsessive-compulsive disorders, trauma- and stress-related disorders, sleep-wake disorders, personality disorders, and suicidal and self-harming behaviours⁸⁰⁻⁸⁹; these prevalence rates are much higher than in the general population (e.g. anxiety disorder 11% to 51%^{86, 87, 90, 91} in the prison population compared to 18.1% in the general (USA) population⁹² or personality disorder 3% to 56.7%^{80, 90, 91} in the prison population compared to 9.1% in the general (USA) population⁹²).

All above findings of the compromised health of (Belgian) prisoners were confirmed by our site visits and interviews with prison-GPs and nurses.

4. HEALTH CARE USE IN BELGIAN PRISONS

To get an insight into the health care use of Belgian prisoners, we analysed a one-year period of the Epicure-database.

From the Epicure database it appeared that, in a one-year period for the 26,511 prisoners who stayed at least one night in prison, there were almost 250,000 contacts registered with a physician in prison; with the large majority (77.7%) of these contacts being a consultation with the GP and, in second place, psychiatrist consultations (Table 5). Given the fact that a GP consultation within the first 24 hours after entry is mandatory by law in Belgium, these obligatory consultations^m at entry were identified as accounting for 10.8% of all registered GP consultations overall (22.2% in new prisoners). This figure does not include contacts with MDs outside prison walls.

Table 5 – Contacts with a physician in prison in 2015

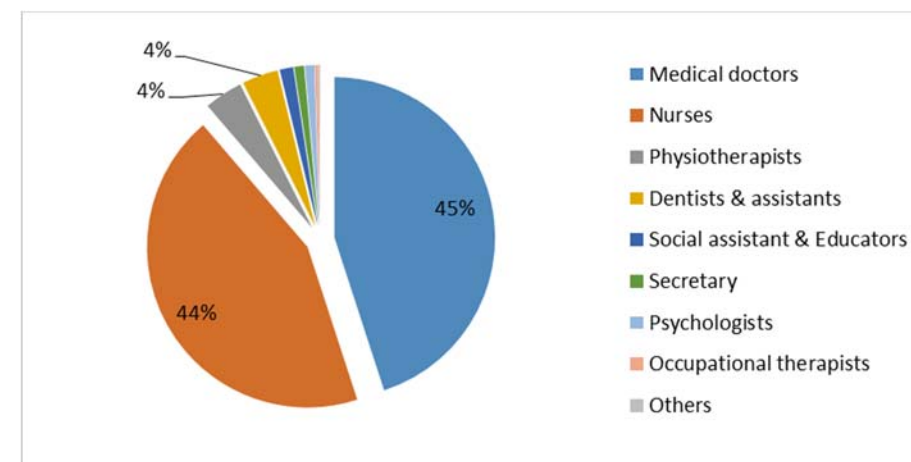
Physicians	Number of contacts (n)	%
GP	193,941	77.7
Psychiatrist	29,789	11.9
Surgeon	6,419	2.6
Radiologist	5,725	2.3
Orthopaedic surgeon	3,111	1.2
Dermatologist	2,643	1.1
All other MDs <1%	7,820	3.1
TOTAL	249,436	100

source Epicure

^m As the specific code for entry consultation was used inconsistently (only 6,022 occurrences), we approximated the proportion of entry consultations by

Besides MD consultations, Epicure 2015 contained also registrations from other health care professionals: 242,617 contacts by nurses, 20,143 contacts by dentists, 21,468 contacts by physiotherapists, 5,262 contacts by psychologists, 1,851 contacts by occupational therapists and 7,529 contacts by social assistants and educators (Figure 4). It is important to note that some of these professionals are mainly allocated to the care of mentally ill offenders: 74% of contacts by psychologists, 70% by social assistants and educators, 64% by occupational therapists and 29% by psychiatrists are delivered to mentally ill offenders whereas this group is less than 8% of the prison population.

Figure 4 – Contacts with health services registered in Epicure in 2015 (n = 554,412)



considering every first GP consultation for a given prisoner entering a given prison (i.e. also when a prisoner is transferred from one prison to another) as an entry consultation.



The overall rate of medical consultation was 23.7 per prisoner-year (95% CI: 23.6; 23.8). The corresponding rate for GP consultations was 18.3 per prisoner-year (95% CI: 18.2; 18.4) (and 16.3 per prisoner-year (95% CI: 16.2; 16.4) when the obligatory entry consultation was excluded), and the rate for psychiatric consultations was 2.9 per prisoner-year (95% CI: 2.8; 2.9). With regard to GP-contacts per prisoner per year a similar figure was reported in another Belgian study by Feron et al.⁶⁰ (2005) who came to a mean of 17.2 GP-contacts/year, which is, according to the authors, 3.8 times more often than the general population (results standardized according to age and sex, and excluding examination on entry). A similar multiplicative factor is found when using more recent reference data from the National Health Survey in 2013⁹³, that came to a mean of 3.2 GP consultations per year in the age category 20-50 years.

However, mean rates hide large individual variations. For example, when looking at prisoners who stayed in prison during the full observation year ($n = 4\,386$), the mean number of all medical consultations was 19.6 (± 18.8), the median was 14 (IQR: 7; 27), with a percentile-5 at two consultations and a percentile-95 at 56 consultations.

For almost 7% of prisoners no medical consultation was registered.

In Table 6 we present crude bivariate rates of medical consultations per prisoner-year stratified per categories of covariates

Table 6 – Crude rates of overall medical consultations

Variables	Categories	N consultation	PY	Rate	95% CI	
Time in prison during observation year	< 3 months	63,435	1,722	36.8	36.5	37.1
	3 months-< 6 months	52,549	2,122	24.9	24.7	25.1
	6 months-< 9 months	38,065	1,655	23.0	22.8	23.2
	≥ 9 months	89,183	4,785	18.6	18.5	18.8
Age	< 20 years	3,399	145	23.4	22.6	24.2
	20-< 30 years	66,184	2,959	22.4	22.2	22.5
	30-< 40 years	79,819	3,345	23.9	23.7	24.0
	40-< 50 years	56,397	2,189	25.8	25.5	26.0
	50-< 60 years	24,360	1,111	21.9	21.7	22.2
	≥ 60 years	11,136	4,295	25.9	25.4	26.4
Sex	Female	19,344	500	38.7	38.1	39.2
	Male	223,888	9,775	22.9	22.8	23.0
Nationality	Belgian	137,706	5,691	24.2	24.1	24.3
	Foreigner	90,858	4,093	22.2	22.1	22.3
Residence status	Legal	183,408	7,465	24.6	24.5	24.7
	Not allowed	38,505	1,836	21.0	20.8	21.2



	Unregistered EU citizens	21,319	974	21.9	21.6	22.2
Language	French	120,293	5,352	22.5	22.3	22.6
	Dutch	91,336	3,506	26.0	25.9	26.2
	Other	24,141	1,151	21.0	20.7	21.2
Prisoner status	Convicted	143,395	6,627	21.6	21.5	21.7
	Accused	72,621	2,682	27.1	26.9	27.3
	Mentally ill offenders	23,265	839	27.7	27.4	28.1
	Other	3,951	127	31.0	30.1	32.0
New prisoner	Yes	97,613	3,172	30.8	30.6	31.0
	No	145,619	7,103	20.5	20.4	20.6

From the Epicure database, it also appeared also that there was a large variety in health care use per prison, as shown in Figure 5 related to the mean (all) medical consultations per prisoner-year per prison and in Figure 6 related to psychiatric consultations. From the multivariate analysis, it appeared that the consultation rate was significantly:

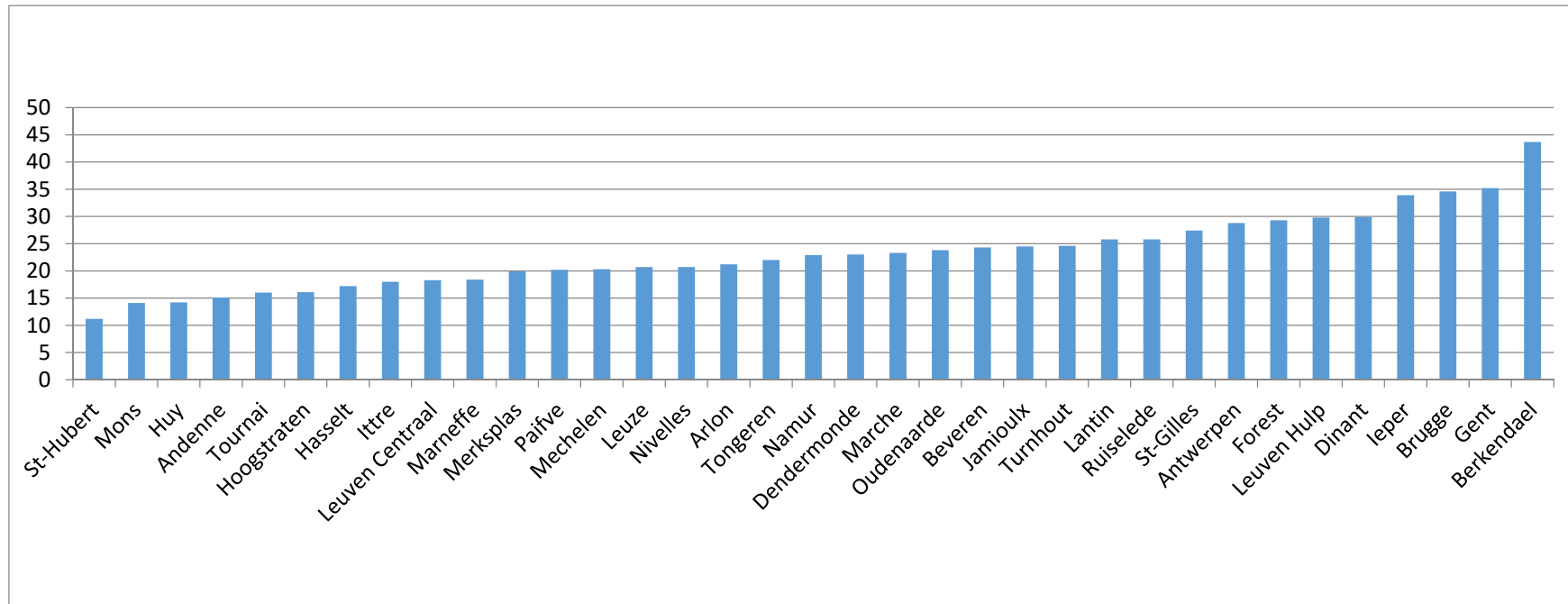
- higher
 - in prisoners having stayed less than three months in prison during the observation year, even when the obligatory entry consultation was excluded
 - in new prisoners
 - in the age categories 40 -< 50 years and ≥ 60 years than in other categories
 - in females than in males
 - in mentally ill offenders than in convicted prisoners

- lower
 - in individuals having no residence permit or being an unregistered EU citizen in comparison with those with a legal residence status
 - in prisoners not speaking French or Dutch
 - in accused individuals than in convicted prisoners

However, we also observed a large variation in medical consultations across prisons; this high variability in consultation rates across prisons remained, even after adjustment for the effect of covariates.



Figure 5 – Overall MD consultation rates (consultations per prisoner-year), per prison 2015 (Epicure)



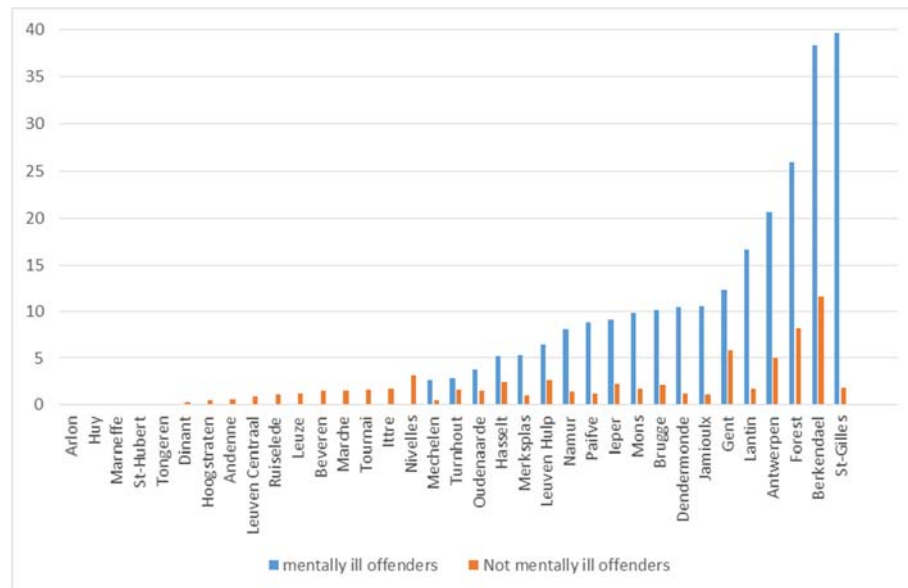
In addition, high variability across prisons was observed for the number of contacts with psychiatrists (Figure 6). It was for example striking that the rate of psychiatric consultations in mentally ill offenders was five times lower in Merksplas than in Forest. Also, for non-mentally ill offenders, large variations in the psychiatric consultation rate were observed.

In comparison with associations observed for overall consultations, there were two differences regarding psychiatric consultations: first, the consultation rates increased with the time spent in prison during the observation year; second, the consultation rate was, as expected, much higher in mentally ill offenders than in other prisoners (Hazard Ratio = 2.98; 95% CI: 2.66; 3.36); but the rate variation among prisons remained after adjustment for covariates.

In some prisons there are few to zero contacts with a psychiatrist; this is surprising when the high number of mental health problems, also in non-mentally ill offenders, is taken into account. This points to a possible underconsumption of specialized mental health care and it suggests that GPs are currently taking care of (severe?) mental health problems (this was confirmed by interviews with health care staff during site visits).



Figure 6 – Psychiatric consultation rates (consultations per prisoner-year) per type of prisoner & per prison, in 2015 (Epicure)



Finally, Epicure shows that the high health care use is also reflected in a high number of medication users: almost 80% of prisoners received at least one medication prescription in 2015. As previously discussed, the main group of medication prescriptions was related to the nervous system.

5. HEALTH CARE ORGANIZATION IN BELGIAN PRISONS

5.1. Current organization of health care

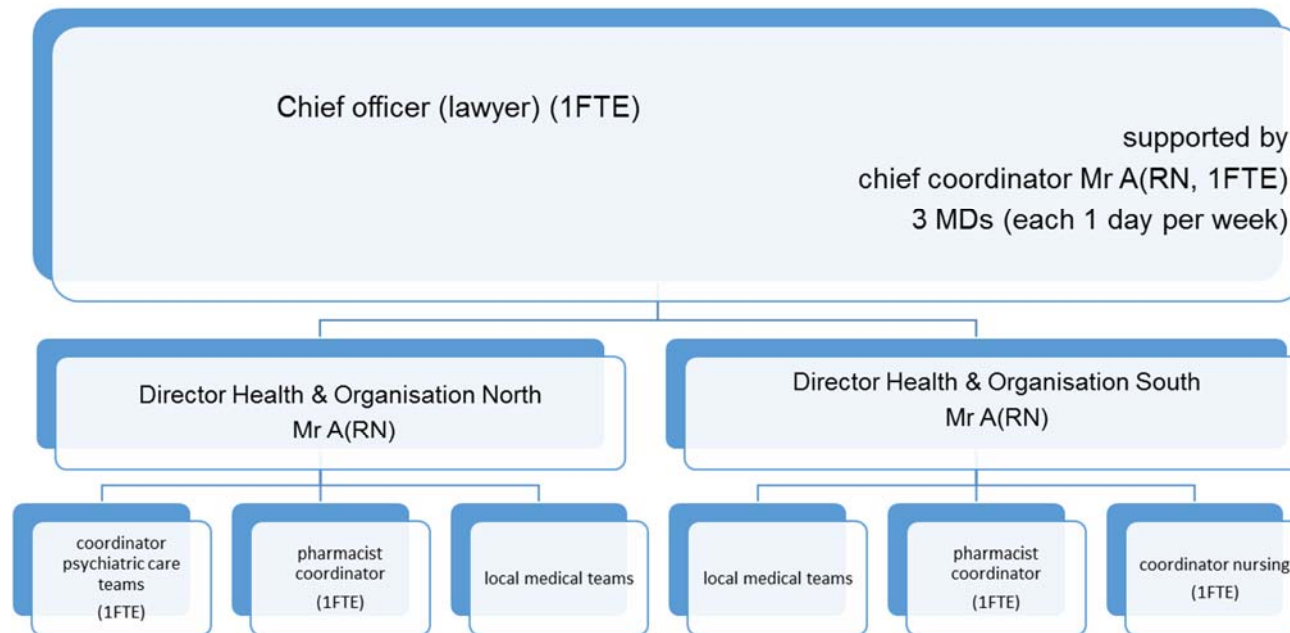
To get an insight into the actual organization of health care, we interviewed staff members several times from the central service 'Dienst Gezondheidszorg van de Gevangenen/Service des Soins de Santé en Prison' (DGZG/SSSP), organized within DG-EPI, studied official documents and Belgian literature, performed a survey with medical departments in prisons, held site visits and stakeholder/expert meetings. The stakeholder meetings and consultations included representatives from DG-EPI, FOD/SPF Public Health, RIZIV – INAMI, health insurers, penitentiary health council, steering committee penitentiary health care, central and local prison surveillance committees, health care professionals working in prisons, charity organizations representing views from prisoners, researchers and experts on health care in prisons.

The Minister of Justice is currently responsible for health care provision to prisonersⁿ. For this purpose, a central service 'Dienst Gezondheidszorg van de Gevangenen/Service des Soins de Santé en Prison' (DGZG/SSSP) is organized within the Directorate General of Penitentiary Services (DG-EPI), one of the three directorates within the FPS Justice.

ⁿ However, defederated authorities have competences related to prevention and health promotion



Figure 7 – DGZG – SSSP organogram



This DGZG/SSSP is not a health care provider itself, but a coordinator and facilitator for health care provision at the local prison level; the official task description is given in the text box. As can be seen in the organogram, the DGZG/SSSP is led by a single chief of services (lawyer), assisted by a full-time nurse coordinator and three MDs as adjuncts (each for one day per week); for the northern part of the country, there is a psychiatric care team coordinator and a pharmacy coordinator, while for the southern part of the

country there is nursing coordinator and a pharmacist coordinator. Thus, the total amount of human resources for this DGZG/SSP is only 5.6 FTE. This seems extremely low to govern health services in 35 prisons for more than 10,000 prisoners on average. Moreover, crucial competencies seem absent to fulfil the missions of the DGZG/SSP (see box below), e.g. health prevention and promotion, health services monitoring, or epidemiology.

**Table 7 – Penitentiary Health Service task description^{o 94}**

‘De dienst Gezondheidszorg van de Gevangenen (DGZG) is het kenniscentrum wat gezondheidszorg in de gevangenen betreft. De dienst staat in voor het beheer van en het toezicht op de gezondheidszorg, in overeenstemming met de geldende regelgeving. Medische zorg in de gevangenis bestaat uit curatieve zorgen verstrekt door de zorgverleners met het oog op het bevorderen, vaststellen, behouden, herstellen of verbeteren van de lichamelijke en geestelijke gezondheidstoestand van de patiënt. Ook de bijdrage van de zorgverleners tot de gezondheidspreventie en de gezondheidsbescherming van het personeel en van de gedetineerden en de bijdrage van de zorgverleners tot de re-integratie van de gedetineerden in de samenleving behoren tot de medische zorg. Het is de taak van de DGZG om gezondheidszorg aan te bieden die gelijkwaardig is met deze in de vrije samenleving. Deze zorg moet aan de specifieke noden van de gedetineerden zijn aangepast. Zo dienen de gezondheidstoestand en de detentie in overeenstemming te zijn en moeten gedetineerden, indien nodig, naar een ziekenhuis buiten de gevangenis worden overgebracht. Ook voor vrouwelijke gedetineerden, vooral wanneer zij zwanger zijn, gehandicapte personen en verslaafden worden specifieke maatregelen genomen.’

‘Le Service des Soins de Santé en Prison (SSSP) est le centre de connaissances dans le domaine des soins de santé dans les prisons. Il assure la gestion et la surveillance des soins de santé conformément à l'esprit des réglementations en vigueur. Les soins médicaux en prison comportent les soins curatifs dispensés par les prestataires de soins en vue de promouvoir, de déterminer, de conserver, de restaurer ou d'améliorer l'état de santé physique et psychique du patient ainsi que la contribution des prestataires de soins à la prévention et à la protection sanitaires du personnel et des détenus et la contribution des prestataires de soins à la réinsertion sociale des détenus. Il appartient au SSSP d'offrir des soins de santé équivalents aux soins de santé dispensés dans la société libre. Ces soins doivent être adaptés aux besoins spécifiques des détenus, comme par exemple la compatibilité de l'état de santé avec la détention, la nécessité d'un transfert vers un hôpital hors de la prison, les mesures spécifiques concernant les femmes détenues, notamment les femmes enceintes, les handicapés, les toxicomanes.’

In each prison, there is a local Health Care Service responsible for providing primary health care, composed mainly of GPs and nurses. Within bigger prisons, the service also provides specialist medicine (e.g. dermatology, radiology, gynaecology, etc.), which means that the specialist comes inside the prison to provide care. Ambulatory specialist care can also take place outside prison, e.g. in a hospital or ambulatory specialist service. However, the prisoner can only get access to an (outside) specialist and hospital care through a referral by a general practitioner from the health care service.

Two models co-exist for hospitalization. Hospitalization is possible in the prisons of St-Gillis/St-Gilles (12 beds^p) and Brugge (24 beds) which both have a Medical Centre (CMC) where all other prisons may send their prisoners for diagnosis and treatment by medical specialists. Besides these, the prison of Lantin hires four beds in a secured room at the CHR La Citadelle in Liège^q.

In case of emergency, prisoners are sent to local hospitals. Within these hospitals, the prison's security staff is in charge of the surveillance of the prisoners.

^o <http://www.lachambre.be/FLWB/PDF/54/0497/54K0497007.pdf>, p. 43, 2014

^p Reduced to six beds in 2016 due to a shortage of security officers

^q Based on an audit of the DGZG/SSP, there were 231 hospitalizations in the first four months of 2017 (93 in CMC of Brugge or St-Gilles, 42 in CHR and 96 in local hospitals)



Twelve prisons are equipped with special psychiatric sections for mentally ill offenders and detainees with psychiatric disease. For these annexes, care teams ('zorgteams/équipes de soins') are installed, consisting of psychiatrists, psychologists, psychiatric nurses, social workers and occupational therapists.

Finally, in the prisons of Merksplas and St-Hubert, there is a care ward for elderly prisoners and disabled persons.

According to the DG-EPI's annual report (p. 49⁴⁹), the DGZG/SSSP employed 274 persons (i.e. 226.25 FTE) in 2015 as health care personnel, mostly nurses and paramedics. These were complemented by approximately 500 self-employed workers (general practitioners, medical specialists, dentists, pharmacists, nurses, etc.), interim nurses, and health care providers and collaborators with an external employer (e.g. assistance in case of drug abuse)⁹⁵.

The vast majority of health care providers, except nurses, are freelancers, who have their own practice in the civil society and work a few hours a week in prison. They send monthly invoices to DG-EPI accounting for the number of hours delivered and technical acts. In 2015, 181 different GPs worked in prison (EPICURE data).

Nurses and physicians represent the bulk of the penitentiary care workforce (approximately 80%). Almost 85% of the nurses are employees and constitute 70% of the health care staff which is directly employed by the DG-EPI in prison. Physicians are the second largest group (32%), and consist of both general practitioners (50% of all physicians) and medical specialists. Contrary to nurses, physicians are almost exclusively self-employed (99% of all physicians).

5.2. Problems in actual health care provision

As already mentioned in the introduction, health care provision in Belgian prisons has been criticized many times by several international and national organizations and persons⁷⁻³⁵. Furthermore, in this project, in the surveys, stakeholder meetings and interviews during site visits, a long list of problems and shortcomings were signalled. Frequently mentioned (although the extent of the problems could not be quantified exactly) problems are listed (not exhaustive) below.

General problems in health care delivery and organization

- Inadequate central coordination of prison health care
- An image problem of prison health care, which often translates into a lack of health care staff willing to work in prisons
- A health care demand exceeding the actual health care offer
- An imbalance in priorities between health care staff and security staff, resulting in delayed or cancelled medical consultations (either internal or external)
- A limited coordination of health care in prisons and between prisons and external organizations
- A high turnover in staffing
- A lack of training of health care professionals in terms of prison health problems
- A lack of guidelines for organizing penitentiary health care and for specific health issues adapted to the prison environment
- Suboptimal communication between health care professionals (drug abuse counsellors, psychiatric care teams)
- Poorly performing information technology and outdated electronic patient files
- Delays in paying staff



- No formal quality control system

Primary care problems

- Understaffing of health care staff
- Confidentiality (the most common vehicle for prisoners to request a medical consultation is a simple paper request form, often handed over to detention officers, presence of security officers during medical consultations)
- Lack of a coherent medical guard (after hours) system
- Scattered offer of health prevention/promotion initiatives
- Lack of standardized coordination of prison health care teams: stakeholder interviews revealed differences in the coordination of the prison health care teams. A coordinating nurse may be appointed either for coordinating nursing teams in different prisons or for coordination in a single prison. There is no financial bonus in the remuneration of the coordinating nurse. Not all prisons have an appointed coordinating GP; their role is not clearly defined except for some administrative tasks and contacts with the central medical service administration or the prison management.
- Lack of continuity of care after release

Secondary health care problems

- Difficulties for prisoners to access secondary care
- Transport, security and logistics: the transport of prisoners to the CMC or to local hospitals is one of the main problems in secondary care. As stated by all interviewees, transport is difficult to organize as police, safety corps and, sometimes, local guards need to be coordinated and deployed. Currently approximately one out of three extractions is refused by prison management for security reasons, transportation problems or lack of security personal. The organization and planning of transportation is time-consuming and requires lots of administrative tasks. Therefore, going to a simple consultation in a CMC could take up

to two weeks and numerous medical appointments must be cancelled due to logistics and transportation problems. In addition, the cost of the accompanying detention officers due to safety regulations is high.

- Shortage of specialists willing to come into prison
- Outdated medical equipment in prisons and CMCs
- Barriers at the prisoner level and cancellations: Interviews revealed that barriers to secondary care also exist at the prisoner level. First, prisoners fear that if they leave their prison to be transferred to a CMC, they may lose their cell, jobs (if working) and may not be allowed to receive any visits. Second, prisoners also experience personal barriers such as poor health literacy, cultural or linguistic barriers that prevent them from correctly formulating their complaints to the health care staff, although these barriers are not specific to secondary care. Third, some prisoners lack confidence in the health care staff of the CMCs and refuse to go. As a consequence, there is a high rate of no-shows for planned consultations and interventions not just in CMCs, but also in local hospitals.
- Complexities linked to an ageing prisoner population

Specialized mental health care problems

- High demand for mental care and insufficient offer of psychiatric/psychologist care
- Suboptimal management of psychiatric emergencies and guards: in case of a psychiatric emergency, often there is no psychiatrist on call. Psychiatric emergencies are managed by the on-call GP (and the detention officers). GPs have no access to the psychiatric health record, preventing them from providing appropriate advice and treatment.
- High levels of drug abuse



Problems with pharmaceutical services

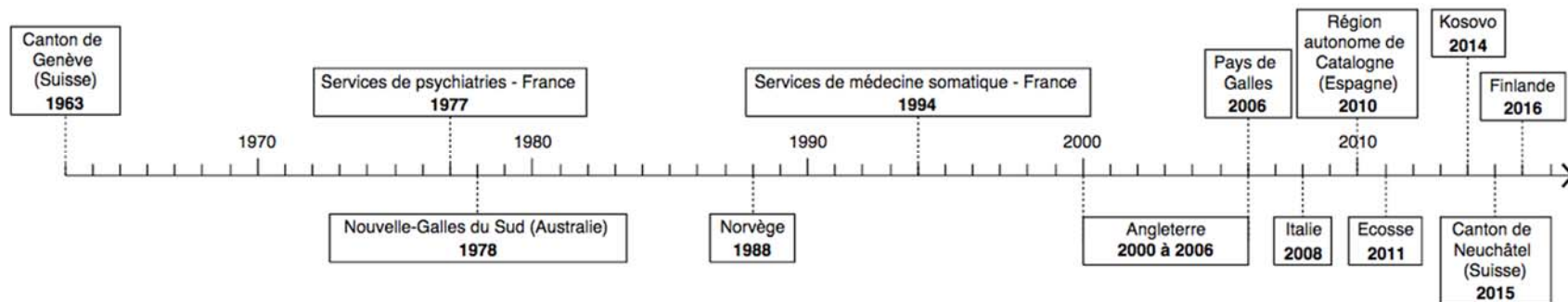
- Critical incidents related to the distribution of medication
- Lack of control of local pharmacists
- Absence of a standardized list of over-the-counter pharmaceutical products
- Absence of control of the distribution of pharmaceutical products to prisoners (in 48% of the prisons surveyed, the detention officers were exclusively in charge of the distribution of medical drugs)
- Absence of control of medical prescriptions (no control as to whether or not the prescription is in line with prisoners' situation, best practices, or according to the reimbursement rules of the RIZIV – INAMI)
- Inequalities between prisoners regarding extra pharmaceutical supplies
- Lack of continuity of medication after release

5.3. Belgian health care organization compared to four other countries

Following the publication of international reports and recommendations^{1, 2, 96}, the improvement of the quality of care in prison has become a concern in several countries.

Many countries have already transferred the responsibility for penitentiary health care from Justice to Public Health (Figure 8).

Figure 8 – Time line for countries making the transfer of the responsibility for penitentiary health care from Justice to Public Health





The WHO Moscow Declaration states that ‘penitentiary health must be an integral part of the public health system of any country’¹. A selection of neighbouring countries was studied. The four foreign countries: France, the Netherlands, Switzerland and Scotland were selected on basis of the following criteria:

- Feasibility (in the allocated period of time):
 - The official and grey literature is abundant and accessible;
 - The literature is written in a language that is accessible to the researchers (English, French, or Dutch);
 - The researchers can rely on pre-existing networks;
- Relevance:
 - The four selected countries offer good practices in terms of the organization of health care in prisons (see below);
 - The selected countries are usually considered as sources of inspiration for Belgian policy makers, especially France and the Netherlands;
- Diversity:

With respect to the subject matter of the transfer of prison health care to the Ministry of Health, France and Scotland present two different and interesting cases of transfer. France has a comparatively long history of prison health - since 1994 - under the authority of the Ministry of Health. Health care in each prison is provided on the basis of an agreed protocol with the nearest public hospital. Scotland’s reform is much more recent (2011) but fully integrated under the rule of the NHS and its regional boards. Due to the organization of its federated system, Switzerland can be seen as a laboratory of different configurations of reform/conservation of the present organization of health care services in prisons. The Netherlands’s choice to maintain the organization of health care under the rule of the Prison Service (Dienst Justitiële Inrichtingen) and to organize a medical service in every prison provides an interesting counterpoint to the other cases.

Some highlights:

- In France, every prison is obliged to sign an agreement with a neighbouring hospital for the delivery of prisoner health care.
- In Scotland, the delivery of care to prisoners falls under the remit of local NHS boards. Health care staff is independent from the prison administration. The collaboration framework between prison and health authorities is formally defined at a national level in political framework documents^{97, 98}. A number of cooperation bodies are in place at national and local levels to ensure their collaboration and to continue to improve prison health through various work streams.
- In the federal Swiss context, each of the 26 cantons has its own organizational and financial system for parliament, government, administration and justice. The prison health care system is independent of the cantonal justice in only four French-speaking cantons.
- In the Netherlands, a local medical team is assigned to every prison and is composed of (sometimes judicial) nurses, GPs, psychiatrists, etc. In many cases, however, doctors are working in a prison in addition to conducting their own regular general practice. Regular hospitals are used for medical specialist care, and some secondary health care is also provided by the prison hospital of Scheveningen.

The policy designs in the French and Scottish cases reveal some similarities in that they externalize the health care of prisoners into public health systems. Collaborations between prisons and health care units are formalized, and health matters are dealt with in other boards and decision-making organs than prison administrations. Moreover, in Scotland, there are new cooperation bodies put in place to regulate collaboration and there is a developmental aspect through work streams. Four Swiss French-speaking Cantons externalize health care decisions for prisoners from Cantonal Jurisprudence, under which it would normally fall. In the Netherlands, medical care and medical care decisions in prison are localized within the prison, however with externally active doctors.



- In French prisons, a medical examination is conducted for every prisoner at admission. The GP can then decide whether specialized care is necessary (addiction substitution therapy, psychiatric care, specialized somatic care, etc.).
- In Scotland, the prison health system is based on enhanced primary care. Nurses and GPs play an important role in the delivery of first-line services. According to the 'Provision of Health Care in Prisons Directions 2011' to Regional Health Boards, each prisoner must be examined by a GP or nurse after entry into a prison (within 24 h for a new prisoner or 72 h after a transfer from another prison). Second-line services are partially provided within the prisons through in-reach provision by specialists. If necessary, health care staff is entitled to refer prisoners to second-line services outside prisons. The Scottish Prison Service is responsible for organizing the transfers.
- In Geneva, within 2 h after arrival in prison, a systematic health screening is performed for each prisoner by a nurse reporting to a GP. If necessary, the patient is referred to a GP within 24 h.
- In the Netherlands, every prisoner receives a medical intake by a nurse within 24 hours upon entering prison. This intake should always be approved by a doctor.

The intake or initial step exists in all four case studies: upon entering the prison, a medical examination determines the general health of the prisoner (and prison-specific health risks such as transmission of infectious diseases, addiction or suicidal risk) and is followed up in case of specialist care needs. This is done by GPs in the French case, while nurses play a greater initial role in Scottish, Swiss and Dutch prisons, where nurses report to the GPs who might step in at a later stage if required. The entry medical consultation is standardized and comprehensive.

Improving the quality of care delivery in prisons appeared to be an important aim: the four countries studied share the same concerns about availability, comprehensibility, continuity, reachability and quality assurance in care delivery.

Different types of instruments are mobilized to do so, among which:

- investment in human resources
- adoption of quality standards
- creation of national quality control bodies
- willingness to subjection to the scrutiny of international control (through the CPT)
- development of adequate and systematic collection of data

In general, the transfer of responsibility for prison health services to health ministries is accompanied by a transfer or reallocation of human resources.

From the point of view of health professionals, prison is generally associated with stigma and stereotypes, which might decrease the attractiveness of the workplace. It was noted in the case of prison mental health professionals that the recruitment and retention of staff are less influenced by financial constraints than by ignorance about the role of these professionals⁹⁹. Various strategies have been explored and implemented in the countries studied to recruit and retain staff.

The adoption of quality and ethical standards is one of the most commonly used instruments in the four countries. These standards might be defined in terms of principles (like the principle of equivalence of health care), or objectives to be achieved or procedural guidelines to be applied. These guidelines are either specific or similar to the standards which apply to the wider community. These standards can be compulsory – like the 'Medical care and prevention in prison' rules, adopted by the Canton of Geneva's government or the Quality Act for Health Care Institutions (1996) in the Netherlands – or indicative. The adoption of legally binding standards could be crucial if the health care system in Belgian prisons must be reformed.



The creation of quality control bodies is another part of the quality assurance system in some countries (an extensive description of involved control bodies in each country can be found in Appendix 4³⁹). The mission of these bodies is often linked to broader issues than quality assurance in care delivery. Independency is an important organizational principle of these bodies, which can come in various forms: independent administration, independent agency, professional ethics committee, etc. The four countries analysed have signed and ratified the Optional Protocol to the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (OPCAT) adopted in 2002 by the United Nations. They are therefore required to 'designate or maintain' a National Preventive Mechanism (NPM) in the form of one or several independent visiting bodies.

The existence and work of these control bodies are widely acknowledged as positive factors within the different prison systems.

The countries analysed also mobilize another instrument to improve the quality of care delivery in prison: they carry out policy experimentation by pilot projects. Some of these projects change the institutional framework and establish themselves durably – such as the BIG ('Bekämpfung von Infektionskrankheiten im Gefängnis'), a project that controls infectious diseases in prisons, launched in Switzerland in 2008, that led to the creation of Santé Prison Suisse (Health Prison Swiss: SPS) - whereas others are retrospectively considered as a (mis)step in the reform process and are progressively abandoned – such as the '13,000 program' in France (1987-1996).

The development of telemedicine is seen as an opportunity to improve access to care in certain situations for detainees. So far in France, the lack of a long-term budget (beyond experimentation steps) and billing codes linked to the kind of medical acts are pointed out as barriers to this development by the French Association of Health Professionals Working in Prison Settings. In Scotland, telehealth in prison is also under development, with for instance, videoconferencing equipment in place in seven out of the 15 prisons and the provision of Cognitive Behavioural Therapies delivered by phone in 10 prisons.

Lastly, one of the important challenges for the future of health care services in prisons is the development of adequate and systematic collection of data.

Another important lesson was the need for effective cooperation and communication between Health and Justice, which is widely acknowledged by international experts.

Finally, in the countries and regions concerned by the integration of prison health in public health ministries, it is generally admitted that the reforms have served to reveal the dramatic underfunding of health care in prisons and a need to improve care delivery and prevention.

However, the International Centre for Prison Studies¹⁰⁰ warns that 'transferring responsibility for prison health care from the control of the prison system to the control of the health ministry is a complex process which is likely to affect a number of different interests and to bring together two groups with a very different professional view of the world. Existing prison health personnel are liable to feel threatened and to suspect they will be judged unfavourably by their colleagues who come in from outside. Other prison staff may resent working alongside colleagues who seem to be outside the chain of command and who are responsible to another body with different values.'

It is also important to note that the transfer and reform of penitentiary health care services may take a long time, as shown by the reform in Scotland, where five years after the transfer, many problems still exist^{101, 102}.



6. LEGISLATION RELATED TO HEALTH CARE IN PRISON

6.1. The right to quality health care

The so called 'Basic law on prisons'¹⁰³ was approved in Belgium in 2005 and, among other things, specifies the rights of prisoners regarding health care. The main articles are shown below in the textbox.

Art. 88. De gedetineerde heeft recht op een gezondheidszorg die gelijkwaardig is met de gezondheidszorg in de vrije samenleving en die aangepast is aan zijn specifieke noden.

Art. 89. De gedetineerde heeft in de loop van zijn detentietraject er recht op dat de gezondheidszorg die hij voor de opsluiting in de gevangenis genoot gelijkwaardig wordt voortgezet. Hij wordt zo spoedig mogelijk na zijn opname en daarna telkens hij erom verzoekt bij de aan de gevangenis verbonden arts gebracht.

Art. 90. De gedetineerde heeft recht op de diensten van zorgverleners met de vereiste kwalificaties in functie van zijn specifieke noden.

Art.93. § 1. Wanneer een gedetineerde een medisch geïndiceerd diagnostisch onderzoek of gespecialiseerde behandeling nodig heeft waarvoor de gevangenis niet of onvoldoende is uitgerust, wordt hij op verzoek van de aan de gevangenis verbonden arts, in voorkomend geval na diens overleg met de vrij gekozen arts, overgebracht, indien nodig met medische begeleiding, naar een gespecialiseerde gevangenis, naar een ziekenhuis of naar een instelling voor gezondheidszorg.

Art. 97. § 1. De gezondheidszorg in de gevangenissen wordt gestructureerd en zodanig georganiseerd en geïntegreerd in de gevangenisactiviteit dat ze in optimale voorwaarden kan geschieden.

Art. 98. Er wordt een uit aan de gevangenis verbonden artsen, tandartsen en verplegers samengestelde Penitentiaire Gezondheidsraad opgericht die aan de minister adviezen verleent teneinde de kwaliteit van de gezondheidszorg te bevorderen in het belang van de gedetineerde patiënt. De Koning bepaalt de samenstelling, de bevoegdheden en de werking ervan.

Art. 88. Le détenu a droit à des soins de santé qui sont équivalents aux soins dispensés dans la société libre et qui sont adaptés à ses besoins spécifiques.

Art. 89. Le détenu a droit à ce que les soins de santé dispensés avant son incarcération continuent à l'être de manière équivalente pendant son parcours de détention. Il est conduit auprès du médecin attaché à la prison le plus rapidement possible après son incarcération, puis chaque fois qu'il le demande.

Art. 90. Le détenu a droit aux services de prestataires de soins disposant des qualifications nécessaires pour répondre à ses besoins spécifiques.

Art. 93. § 1er. Lorsqu'un détenu a besoin d'un examen diagnostique ou d'un traitement spécialisé médicalement recommandé pour lequel la prison n'est pas, ou pas suffisamment, équipée, il est transféré, à la demande du médecin attaché à la prison et, le cas échéant, après que ce dernier se soit concerté avec le médecin librement choisi, au besoin avec encadrement médical, vers une prison spécialisée, un hôpital ou un établissement de soins.

Art. 97. § 1er. Les soins de santé dans les prisons sont structurés et organisés et intégrés dans l'activité de la prison de telle manière qu'ils puissent être dispensés dans des conditions optimales.

Art. 98. Il est institué un Conseil pénitentiaire de la santé composé de médecins, de dentistes et d'infirmiers attachés à la prison, qui donne au ministre des avis en vue de promouvoir la qualité des soins de santé dans l'intérêt du patient détenu. Le Roi en fixe la composition, les compétences et le fonctionnement.



However, although the goal of this 'Basic law on prisons' is to offer clarity and legal certainty, legal provisions regarding health care in Belgian prisons are still spread among multiple legal instruments because the 'Basic law on prisons' has only been partially implemented: a necessary royal decree on the implementation of provisions relating to prison health care (art. 87-101) still has not been issued, except for art. 98 regarding the Penitentiary Health Council.

Furthermore, the Belgian penitentiary health care system operates within a legal framework characterized by a tension between two fundamental principles: the principle of equivalence of care, on the one hand, and the maintenance of good order, safety and security in prison, on the other.

Regardless of specific prison regulations, health care rights can be found in legislation applying to the general population. In particular, reference should be made to the 2002 Law on patient rights^r. Prisoners have not been expressly excluded from the scope of application of the legislation in question. This implies that there is no legal ground to apply rules to them that are different to the rules applicable to the general population.

The 2002 Law on patient rights codifies seven distinct patient rights, namely a) the right to receive high quality health care; b) the right to freely choose a health care practitioner^s; c) the right to be informed on one's state of health; d) the right to freely consent to an intervention, with prior information; e) the right to avail oneself of carefully updated health records, and to have the possibility to peruse them and obtain a copy; f) the right to be assured that one's privacy is protected; and g) the right to file a complaint with an ombudsman service.

With regard to the right to high quality health care, this is reflected in three important principles which govern the organization of health care in prisons: the 'principle of equivalence', the 'continuity of care' and the clinical independence of health care staff^t.

The principle of equivalence is expressly mentioned in the 'Basic law on prisons'. However, the European committee for the prevention of torture reported repeatedly on the Belgian situation^{17, 33, 34}, and stated that, at the time of their visits, there was insufficient medical staff to guarantee this principle.

The 'Basic law on prisons' makes reference to the continuity of health care (art. 89). To this effect, the prisoner is referred to health care staff as soon as possible after entry^u.

The independence of health care staff has been codified in the 'Basic law on prisons'. However, issues still arise regarding their role in disciplinary procedures.

^r Wet van 22 augustus 2002 betreffende de rechten van de patiënt, *BS* 26 September 2002./ *Loi du 22 août 2002 relative aux droits du patient*, *MB* 26 septembre 2002

^s The stay in prison and the internal – medical – organisation in there, can be considered to be a justified factual limitation of the right to freely choose a healthcare practitioners and of the right to a copy of the patient file.

^t Art. 24 United Nations Standard Minimum Rules for the Treatment of Prisoners (the Mandela Rules), 2015.

^u In art. 5 of the royal decree of 8 April 2011, this was specified to 'within 24 hours after prison entry'; Koninklijk besluit tot bepaling van de datum van inwerkingtreding en uitvoering van verscheidene bepalingen van de titels III en V van de basiswet van 12 januari 2005 betreffende het gevangeniswezen en de rechtspositie van de gedetineerden, *B.S.* 21 april 2011



6.2. Competencies of the authorities related to health care in Belgian prisons

With the sixth state reform, several competences have been shifted from federal to defederated entities, also on the terrain of health care and with implications for the organization of health care in prisons.

Generally speaking, treatment of health problems are a federal competency, while prevention and health promotion are defederated competencies (= communities).

As outlined earlier, the penitentiary Central Medical Service DGZG/SSSP, residing under the federal Ministry of Justice is responsible for the organization, management, supply and supervision of health care in penitentiaries.

Communities are competent for person-related matters, such as the organization of services of wellbeing, preventive health care, health promotion, social and professional reintegration, education, culture and sports in prisons. Hence, the practical implementation differs according to the Community and within Communities according to the local context of the prison. The Flemish Community is competent for the services related to care and assistance for prisons in Flanders and (for activities in Dutch) in Brussels. The Federation Wallonie-Bruxelles (formerly French Community) transferred the exercise of the competence for care and assistance (for prisoners) to the Walloon region and for (activities in French) Brussels to the French Community Commission^v. The Joint Community Commission co-ordinates the activities offered by the diverse organisations and instances in prisons in Brussels. Activities for non- native Dutch or French speaking prisoners are organised by all Communities.

Within the communities' competencies, many different organizations are subsidized by community governments to deliver the actual health care.

This division of competencies means that many parties are active in the prison health care field and sometimes overlap on some topics. For example, the Communities are held to develop an active prevention policy related to alcohol and drugs in prisons, while the local medical services in prisons, falling under federal competency, are responsible for the treatment of addiction problems. In 2016, a protocol agreement related to prevention was established between the federal government and the defederated entities to enable an integrated policy related to prevention.

However in practice, many parties are active in prison health care, but their actions are not well coordinated and the communication between them is poor.

Different types of instances offer overall psychosocial help to prisoners (from take-in to the period after detention), but there are also instances of offering care in a specific domain, such as mental health, drug related problems, maternity and child care in prison, screening for contagious diseases and other.

6.3. Insurability for health care in Belgian prisons

Currently, Belgian prisoners (within prison walls^w) receive health care for free and the Ministry of Justice pays for most health care costs (see Appendix 5⁴⁰). As a consequence, prisoners are not entitled to coverage and refund of payment for health care services based on the general law on compulsory health care insurance.

For the general health insurance scheme, coverage or reimbursement is suspended due to Article 5, first clause of the Regulation of 28 July 2003 executing article 22, 11° of the Law of 14 July 1994 on compulsory health

^v Article 3, 7°, e) of the Décret spécial du 3 avril 2014 relatif aux compétences de la Communauté française dont l'exercice est transféré à la Région wallonne et à la Commission communautaire française, *M.B.* 25/06/2014

^w For persons who enjoy a prison leave, electronic supervision or a conditional release, the rules of the general health insurance scheme apply.



insurance and benefits^{xy}. This provision states that coverage or reimbursement of costs for provided health care will be denied when the beneficiary is in prison (and consequently as a side-effect, health care use is not followed up by INAMI/RIZIV).

If in the future, the responsibility and budget for penitentiary health care is transferred from the Minister of Justice to the Minister of Social Affairs and Public health, then there are several ways to make sure that prisoners can be insured for health care. For the research in question, four principles were used to formulate three possible scenarios for the future:

- the **right to health care and access to health care**: the 'Basic law on prisons' (2005) states in article 88 that the prisoner is entitled to health care which is equivalent to the health care in the general population and which is adjusted to his specific needs;
- the **neutralization of the principle of subsidiarity**: if the Minister of Justice would no longer be responsible for health care services in prisons, the current obstacle for the insurability and coverage and reimbursement via the general health care insurance disappears;
- the principle of **normalization** and the principle of **(social) reintegration**: these principles lie on the basis of the 'Basic law on prisons' (2005) and entail that prison life should as far as possible, except for the fact that one is deterred from their freedom, correspond to life outside prison and that, with the execution of the custodial sentence, their rehabilitation in society is also envisaged, next to restoring the wrongdoing;

- the **promotion of prison work**: currently it is not possible to execute prison work under an employment contract. Consequently, prison work does not lead to entitlements regarding health care insurance. Linking more social rights to prison work could be a way to stimulate prison work. However, this goes beyond the limited scope of the research in hand.

On the basis of the above four prescribed elements, three possible scenarios for the future were explored:

1. regular application of the existing Belgian health insurance rules;
2. freezing the insurable status at the start of the detention;
3. creating a new insurable status in the Belgian health insurance system.

Based on the legal analysis and the opinions of several experts in expert meetings that were held in light of this research, we recommend the first scenario. This scenario entails the most extended application of the principle of normalization and has the smallest impact on the existing system. Furthermore, there will no longer be a problem of inconsistency since it is possible that the rules of the general insurance system will apply. If a prisoner is not able to be insured via the general health care system because he is not legally residing in Belgium, the coverage of health care by the FPS Social Integration, on the basis of the 'urgent medical aid' system, offers a solution, as it currently is used for undocumented migrants in Belgium¹⁰⁴.

^x Wet van 14 juli 1994 betreffende de verplichte verzekering voor geneeskundige verzorging en uitkeringen, B.S. 27 augustus 1994/ Loi relative à l'assurance obligatoire soins de santé et indemnités coordonnée le 14 juillet 1994, M.B. 27 Août 1994

^y Verordening van 28 juli 2003 tot uitvoering van artikel 22, 11°, van de wet betreffende de verplichte verzekering voor geneeskundige verzorging en

uitkeringen, gecoördineerd op 14 juli 1994, B.S. 29 augustus 2003 / Circulaire du 28 Juillet 2003 prise en application de l'article 22, 11°, de la loi sur l'assurance obligatoire pour les soins médicaux et les prestations, coordonnée le 14 Juillet 1994, M.B. 29 Août 2003



7. HEALTH CARE COSTS IN BELGIAN PRISONS

7.1. Facts and figures

Approximately €100 million is spent yearly (partially by the Federal Public Service of Justice and partially by the INAMI/RIZIV) on health care for persons that fall under the responsibility of the Minister of Justice (prisoners, mentally ill offenders, persons with electronic surveillance, juvenile delinquents, etc.)¹⁰⁵. For this study, however, we only focused on the health care costs spent on individuals staying within prison walls.

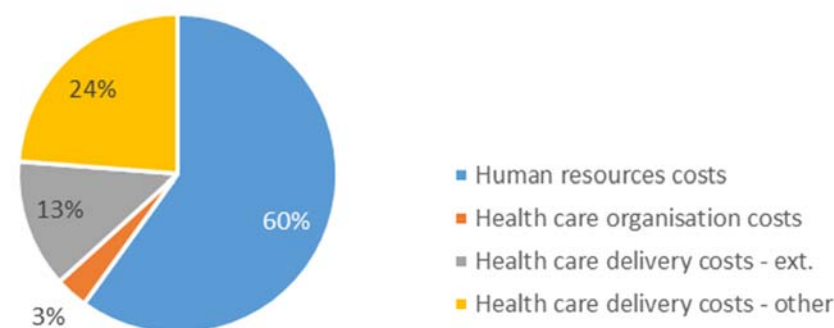
Figure 9 gives an overview of the overall health care expenditure in Belgian prisons. As shown, the budget can be divided into three major types of costs:

1. **Staff/human resources (HHRR) costs:** Costs paid for employees (interims and permanent staff) and external caregivers not employed by the Directorate General of Penitentiary Institutions (i.e. freelancers). These costs amounted to €25,825,740 in 2015 and were split as follows: €12,532,856 spent on permanent staff, €4,795,008 on interim nurses, and €8.497.876 on freelancers.
2. **General health care organization costs:** Cost of equipment and its necessary maintenance and general disposables (not prisoner specific), as well as cooperation agreements. These costs cannot be attached to the health care of a specific prisoner but instead reflect expenditure incurred to ensure a smooth organization of health care. In 2015 this accounted for €1,423,095.
3. **Health care delivery costs:** Expenditure linked to prisoner specific health care delivery (e.g. pharmaceuticals, magistral formulae, anaesthetics, orthotics and prostheses, clinical biology, hospitalizations, external consultations transport costs, etc.). These costs were €15,811,313 in 2015, of which €5,575,801 represented the necessary costs to treat prisoners outside of the prison walls (i.e. hospitalizations, external consultations, transport and clinical biology).

Therefore, from the total estimated Justice costs for inmates in 2015 (i.e. €43,060,147), approximately 60% was spent on staff/human resources; 3% was linked to health care organization and the remaining 37% was linked to health care delivery costs (13% for care for prisoners outside of prison walls, and 24% on other health care delivery costs; see Figure 9).

The mean health care costs per prisoner-year spent on individuals staying within prison walls amounted to €3,900 in 2015.

Figure 9 – Costs of health care provision in Belgian prisons – 2015



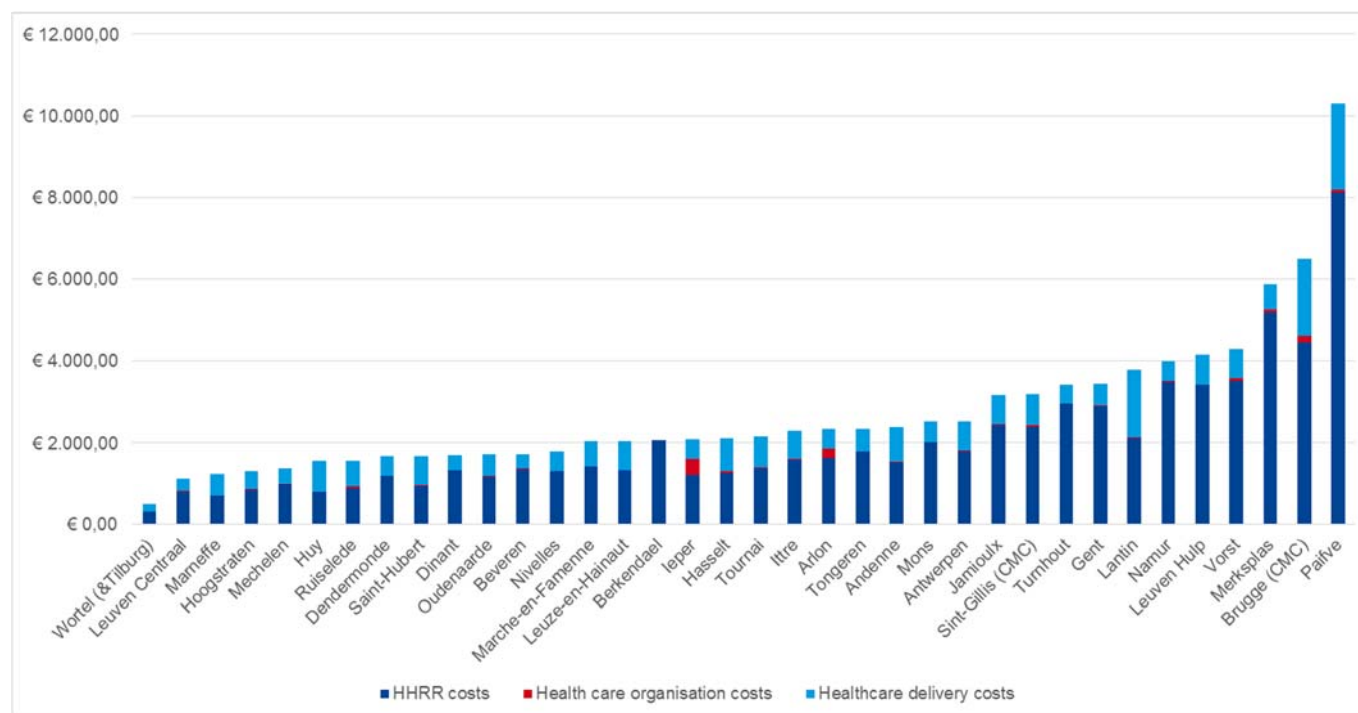
It is important to mention that the data sources for costs were difficult to access, lacked sufficient detail and contained some inconsistencies. Our research appears to indicate that the figures represented here are an underestimation of the real costs. First, it was not possible to identify transport and security costs linked to medical care (with the only exception of ambulance costs) and thus a full picture of costs in that regard is currently unavailable. Second, our field visits and interviews showed that, in some prisons, health care consultations (psychiatric consultations in particular) were sometimes delivered by members of the psychosocial service (PSD) that are not in the DGZG/SSSP invoices.



Moreover, these costs do not cover health care services delivered by defederated entities and only partially include costs for large equipment/infrastructure investments and large maintenance costs. Also, costs related to the central penitentiary health service DGZG/SSSP or to the penitentiary health care council are not in this figure.

When prison specific expenditure estimates (i.e. excluding central costs) are split by prison and per prisoner, a large variety is observed in the mean annual per-prisoner costs across prisons (Figure 10).

Figure 10 – Mean per capita cost per prison in 2015 (DG-EPI invoices)





The expenditure per type of care is shown in Table 8 below. From this, it can be seen that the most money is spent in primary care services, followed by pharmacy related costs.

Table 8 – Overview of health care costs per type of health care for prisoners in Belgium in 2015

Type of health care for prisoners	Total (€)
Primary care costs	€14,021,486
Pharmacy-related costs	€10,511,320
Secondary care costs	€8,161,569
Mental health care costs	€7,304,890
Dental health care costs	€1,628,286
Other	€1,432,597
TOTAL	€43,060,148

When looking at the costs per prisoner per year for each type of care, a large variability per prison is observed, as was the case for the total.

Thus, the variability between prisons that could not be explained a priori by the characteristics of the prisoners was a common finding throughout this report for both costs⁴⁰ and health care use³⁷. Such results appear to point out the possible different health care provision approaches per prison, but our results should be looked at with caution given the lack of detailed data on the diagnosis/prevalence of diseases. Furthermore, when comparing mean per capita costs per prison and per capita health care usage (i.e. consultations) per prison, important differences were seen and the correlation between both appeared to be weak. No clear explanation for such differences could be found, highlighting the crucial need for better, more complete registration systems, which could allow to draw more detailed prison-specific conclusions.

8. SCENARIOS FOR FUTURE HEALTH CARE ORGANIZATION IN BELGIAN PRISONS

The listed problems in Belgian prisons were compared to international recommendations and presented to external experts and stakeholders (see colophon), to define the essential building blocks for future, improved health care in prisons. Examples of building blocks were for instance e-health, bringing prison secondary health care into hospital, nurse triage, screening methods and other. Based on these building blocks, scenarios were drafted and presented to a large group of stakeholders via an online survey. Stakeholders were invited to set their priorities and comment on the scenarios. We contacted 450 persons (of whom 156 responded), including representatives of DG-EPI, FPS Public Health, RIZIV – INAMI, sickness funds, the penitentiary health council, the steering group penitentiary health care, presidents and medical representatives of the central and local surveillance committees in prisons, health care providers in prisons, representatives of professional associations of physicians and nurses, representatives of the labour unions, representatives of the organizations supporting prisoners and their family and experts in the domain of health care in prisons. Extended information on the drafting process of the scenarios and the stakeholder involvement procedures can be found in the scientific report^{44, 45}.

8.1. General

Our research made clear that the current health care provision in Belgian prisons has several major shortcomings and a redesign/reorganization is necessary. All parties agree on a transfer of competency and budget for prison health care from the Minister of Justice to the Minister of Social Affairs and Public Health. This transfer is an excellent opportunity for reorganizing and improving penitentiary health care.



It is essential that this reform is centrally guided; the current central 'Dienst Gezondheidszorg van de Gevangenis/Service des Soins de Santé en Prison' (DGZG/SSSP) from the DG-EPI/Ministry of Justice could take the lead in this, after they are transferred to the Ministry of Social Affairs and Public Health and become well-equipped for the new tasks/duties.

The main principles (and which are generally supported) for the reform are:

- health care in prison must be equivalent to health care in the outside world
 - health care must comply with medical ethics, in particular the respect of confidentiality and consent
 - the so-called 'basic law on prisons' approved in 2005 has to have come in force with publishing of the necessary royal decrees as soon as possible
 - health care is multidimensional and requires a multidisciplinary approach and therefore a multidisciplinary team is installed in every prison
 - every prisoner should receive a comprehensive health assessment at prison entry as a base to create an individual care plan for each prisoner
 - health care is provided as much as possible within prison walls (including specialist care)
 - health care professionals and organizations involved in prison health care are 'hired' from regular providers in the outside world
 - current health insurability rules in the outside world should also be applied to prison health care
 - continuity of care is seen as obvious, without questioning
- e-health applications are seen as a promising way to deliver care and can be part of all types of care and should be improved and promoted as much as possible
 - every prison, or a cluster of nearby prisons, cooperates with a nearby acute care hospital for specialized somatic care and cooperates with a nearby specialized mental health care provider for specialized mental health care (as is the case in France)
 - remuneration for prison work should at least be as attractive as the one in the outside world

To achieve this, more money will be needed than the current spending on prison health care (for a well-equipped (quantitatively and qualitatively) central prison health care service, for more and well trained health care providers in prisons, etc.)^z. Of course, a budget is needed to guide, coach and evaluate the whole redesign and implementation of the changes, especially in the first years after the transfer. Unfortunately, no specific examples of financial evaluations after the transfer were found during our international review. Although in Scotland, a review on the financial implications of the transfer was scheduled to be performed by the end of 2016 by Audit Scotland (<http://www.audit-scotland.gov.uk>), at the time of the publication of this report, such a review was not yet available and we were informed that its publication has been postponed to 2018.

^z In the countries concerned by the integration of prison health in public health ministries, it was generally admitted that the reforms have served to reveal the dramatic underfunding of health care in prisons and to improve care delivery.



8.2. Primary care

For first-line care, two possible scenarios were envisioned after a discussion of the building blocks with experts and stakeholders.

The first scenario is one in which the current organization of primary care practice is kept as it is and the second is one in which primary care is transformed to an interdisciplinary coordinating primary care team (both under the responsibility of the Minister of Social Affairs and Public Health). The second option was supported by most stakeholders. Primary care remains the core of prison health care and needs to be extended to a multidisciplinary team that can approach the health care needs of prisoners in a multi-dimensional way and also needs to cover prevention and health promotion. The interdisciplinary primary care team also needs to coordinate all specialized care.

Hereto, every prisoner should receive a comprehensive health assessment at prison entry as a base to create an individual care plan for each prisoner (a large majority of the consulted stakeholders supports this idea). Evidence based guidelines on how to do this exist (e.g. among others, the guidelines of NICE^{106, 107})

Such an interdisciplinary primary care team should consist of general practitioners, (general and psychiatric) nurses, psychologists, social workers, psychiatrists, physiotherapists and dentists and eventually others according to the health care needs of the prisoners. The team works under the coordination/lead of a GP who should dispose of a significant amount of time (at least 50%) to coordinate the health care team and to cooperate and communicate effectively with the prison management.

8.3. Secondary care

For secondary somatic care, after discussion of the building blocks with experts and stakeholders, three scenarios were envisioned:

1. One prison (centrally located) gets a fully equipped hospital structure within the prison walls and receives prisoners from all over the country that need (non-emergency) specialized somatic care; for emergency care, each prison contracts a nearby local hospital
2. One hospital (centrally located) is contracted and equipped with secured facilities, to which prisoners from all over the country are transferred when they need (non-emergency) specialized somatic care; for emergency care, each prison contracts a nearby local hospital
3. Each prison (or a cluster of prisons located close to each other) contracts a local nearby hospital, to which prisoners from that/those prison(s) go for non-emergency and emergency specialized somatic care^{aa}

Each scenario has its pros and cons, especially with regard to security issues and the organization (and financing) of transfers. These three scenarios were presented to the stakeholders in an online-survey. Opinions diverged greatly.

Scenario 1 with a single prison with a fully equipped hospital infrastructure was regarded as ideal from a security perspective (and suited for very dangerous prisoners) but the disadvantage is very high costs for the equipment and its maintenance and keeping it up-to-date. On the other hand, the advantage is fewer expenses for security measures in external hospitals. However it was questioned if prisoners will be willing to go to a central prison hospital. And this scenario still requires extraction to local hospitals in case of emergencies.

^{aa} Or medical specialists from that contracted local nearby hospital provide care in the prison itself, when possible



Scenario 2 with a single central secured hospital to which prisoners are brought, has as main advantage as it uses an existing up-to-date hospital infrastructure. On the other hand, investments are needed to build a secured hospital wing and to ensure enough security personnel. As in scenario 1, it was questioned if prisoners will be willing to go there and it still requires extraction to local hospitals in case of emergencies.

Scenario 3, in which each (cluster of) prisons contract a nearby local hospital has as advantage in that this hospital can take care of both elective and non-elective cases and there is only a short distance to travel. On the other hand, it means that for many hospitals security investments are needed.

In addition we did not find a 'best' scenario or strong evidence base for any of them in the other countries we studied or in the literature. Nevertheless, taking into account that currently already 112 hospitals are involved more or less in specialist somatic care for the prisoners of 35 prisons, we think that option 3 is the most practical way to go. It will decrease the number of hospitals involved and increase the experience needed with security measures in the decreased number of hospitals involved. Furthermore, this option seems to be the easiest for organizing short-distance transfers from prison to hospital and vice versa compared to the more complex organization of long-distance transfers to a central location in option 1 or 2.

8.4. Mental care

Many prisoners suffer from mental health problems. Some of them are judged as not accountable for their acts (= mentally ill offenders) and are taken care of in psychiatric annexes of prisons. The current policy is to move all mentally ill offenders out of prisons to specially adapted forensic psychiatric care centres (FPCs); it is expected that in a few years enough FPCs will be opened to accommodate all mentally ill offenders.

However, many other prisoners also suffer from mental health problems. In the proposed scenarios, after discussion of the building blocks with stakeholders and experts, a distinction was made between prisoners with less severe mental health problems and prisoners with severe mental health problems.

The scenario in which it was proposed that the interdisciplinary primary care team, supported by specialized psychiatric professionals, would take care of the prisoners with less severe mental problems was largely supported by the stakeholders, although some mentioned that there is no such thing as 'less severe mental health problems'.

With regard to the prisoners with severe mental health problems, two scenarios were envisioned: one in which these prisoners are spread across all prisons and one in which they are concentrated in a specialized psychiatric wing of the prisons or in a selection of prisons. In both cases, mental health care would be provided by external specialized psychiatric teams. Most of the respondent stakeholders were in favour of some form of concentration, since this would facilitate appropriate care and makes it easier to hire security staff specialized in the surveillance of prisoners with psychiatric behaviours. Some think that the concentration of mentally ill prisoners is certainly a good option for all addiction-related treatments. In addition, this concentration can offer a kind of protection for vulnerable prisoners. Opponents state that concentrating mentally ill prisoners is an impediment for social contacts and makes it more difficult for relatives to visit; others warn that concentration may stigmatize prisoners.



8.5. Dental care

In 2015 there were approximately 20,000 dentist consultations for the total of 26,000 prisoners. However, since the size of prisons widely varies from roughly 60 to 700 prisoners, we wondered if it would be worth it to have a fixed fully equipped dentist office in each prison, or if smaller prisons could be served by a mobile dental van^{bb}. No scientific evidence could be found and opinions diverged in the stakeholder consultation; some of the respondents preferred a fixed fully equipped structure for large prisons in combination with a mobile dental van for small prisons, while others preferred a fixed structure in each prison.

8.6. Insurability

As stated before, prisoners are currently not entitled to coverage and refund of payment for health care services based on the general law on the obligatory health care insurance, because the Federal Public Service of Justice is paying all health care costs. In order to have an equivalent situation in prison as in outside society, three scenarios were studied (see full details in appendix 8). The basic premise in all three scenarios was that the Federal Public Service of Justice will stop paying for health care services to prisoners, and in this way the barrier to the right for coverage by the obligatory health care insurance is removed.

In the first scenario, we looked at to what extent all existing regulations could apply to people in prison by applying the entitlement of 'resident'; in the second scenario, the consequences were studied with continuing the entitlement at prison entry and in the third, the consequences of the creation a new entitlement for prisoners was studied.

The first scenario encompasses the idea that if the prisoner is no longer covered by the FPS Justice for health care, the existing rules on health care insurance become fully applicable. This means that for prisoners who are legally residing in Belgium, a normal, similar application of the current health care scheme is possible. However, it is not applicable if a prisoner is not legally residing in Belgium, but it would be able to rely on the system of urgent medical help.

The second scenario, freezing the insurable status at the start of the detention, can be seen as a variation of the first scenario, as it aims at the application of the obligatory health insurance system. However, the second scenario tries to limit the impact of detention on the insurable status, by freezing the status that one had right before the start of detention. This would mean that the prisoner could maintain his insurability without any problems. However, there are pitfalls, e.g. this scenario could lead to several artificial constructions as to remedy the fact that the upheld status will no longer match with reality; unclear effects of this freezing of a status once the detention ends. And freezing the status is often not necessary, because most prisoners are only imprisoned for a rather short period, in which case the regular application of the health insurance, as described in the first scenario, can already overcome a lot of problems.

The third scenario starts from the idea of creating a new insurable status in the health insurance system, namely that of "persons staying in prison". This new status would cover all prisoners, irrespective of their residence status and would thus entail a clear-cut approach.

However, this scenario can lead to situations of unequal treatment. Persons outside prison, that are not legally residing in Belgium, cannot rely on the health insurance system, but have to make use of the system of 'urgent medical help'. Furthermore, if a prisoner who was not legally residing in Belgium becomes insurable in the general health insurance, this will also create rights for his dependents outside. These unequal treatments could be solved by making a distinction between prisoners on the basis of their

^{bb} In the Netherlands, a mobile dental van is used in prisons where less than 10 hours dental care per week is needed; costs for the mobile dental unit are estimated at 500,000 to 700,000 Euros;



residence status, but this would also undo the largest advantage of the third scenario, namely the unified approach. Furthermore, creating a new status is often not necessary and would lead to an unnecessary heavy administrative burden. Moreover, this third scenario stands in contrast with the principle of normalisation. Creating a whole new insurable status, encompasses a prominent distinct approach for prisoners, which can be more poorly received by the public opinion than small adaptations to an already existing insurable status.

Careful analysis and discussion with experts showed that the 1st scenario is the most practical one and most similar to the outside world. Furthermore, there will be no longer a problem of inconsistency if a prisoner can make use of sentence execution modalities, since it is possible that the rules of the general insurance system will apply. If a prisoner will not be able to be insured via the general health care system because he is not legally residing in Belgium, the coverage of health care by the FPS Social Integration, on the basis of the system of “urgent medical help”, offers a solution. One side effect might be an increase in workload for the CPAS/OCMW with regard to prisoners that have no legal residence status.

Finally, there remain issues regarding eventual application of the system of third-party payment for prisoners and how to deal with the own contribution. Further discussion between FPS Justice, FPS Public Health and RIZIV – INAMI is needed to make final decisions on these.

8.7. Payment modalities for prison health care

Currently, there is a mixture of ways in which the Federal Public Service of Justice pays for the delivered health care services to prisons. Some providers are employed by the Federal Public Service of Justice and receive a salary, others are hired as freelance providers or as interim workers and receive a fee per hour, and some acts are paid in a fee-for-service manner. However, when the Federal Public Service of Justice will no longer pay for health care services, new modalities for financing can be envisioned.

The current system in prisons, where most nurses are salaried, and payment for GPs mainly relies on a fixed number of hours per month (irrespective of the number of patients seen) is unlikely to encourage efficiency. Capitation payments or activity-based funding could introduce better incentives for an

efficient multidisciplinary and collaborative approach between all health professionals involved in primary care.

Nevertheless, effective methods for capturing more accurate and complete patient diagnostics and cost-specific data would represent the first step required to set up pilot studies on the effect of value-based payment models in Belgian prisons. In the meantime, estimates for the overall funds that would need to be transferred would have to be based on historical expenditure.

Regarding secondary care (specialist or hospital care), changing the payment system currently used outside of prison may not be appropriate given the problems already faced at present to attract specialists to come into the prison or the complications that a separate payment system could bring for hospitals dealing with prisoners.

Furthermore, the RIZIV – INAMI nomenclature only covers curative health services, while federated entities take care of health promotion, prevention and the wellbeing of prisoners. This political fragmentation constitutes an important challenge when it comes to the identification of an adequate payment system. Finally, in view of the current data limitations regarding epidemiology and costs for the health care of inmates, it is still premature, at this stage, to recommend specific payment methods.

During the stakeholder consultation, it was asked what payment modality (fee-for-service, activity-based funding or capitation fee) is the most suitable for primary, secondary and mental health care in prisons. Many respondents had no opinion; others showed divergent opinions. No single modality appeared to be the most appropriate or favourite one and many respondents suggest a mix of payment modalities. Much will depend on how future health care in prisons will be organized, e.g. when a multidisciplinary team will be chosen for delivering primary care, it is quite conceivable that capitation fee or activity-based payment systems best fit this scenario, as is currently already the case for ‘wijkgezondheidscentra/maisons médicales’ in the outside world. During the implementation process, a financial-technical working group will be needed to prepare suitable payment methods for all types of health care services to prisoners.



8.8. Central services

A major reform of penitentiary health care requires a lot of effort at the local prison level as well as good steering and coordination at a central level, under the responsibility of the Minister of Social Affairs and Public Health. The main tasks for the central penitentiary health care service are:

- developing a step-by-step implementation plan with well formulated goals to be attained
- preparing public tenders and contracts for health service delivery in prison by professionals/organizations from the outside world
- setting up a quality control system including an epidemiologic overview, respect of human rights standards such as injury detection and reporting registries, quality of confidentiality, etc.
- adapting guidelines to the specific prison circumstances
- setting up an adequate and systematic collection of data on health problems, health care use, intervention and outcomes
- developing a communication and coordination plan together with the Federal Public Service of Justice with regard to security and confidentiality measures needed for health care delivery and health care related transports
- installing a finance/technical committee to prepare payment modalities for health care delivery

9. CONCLUSIONS AND DISCUSSION

The main findings of this study on current and future health care in Belgian prisons are:

- many prisoners in Belgium have a poor general health condition and suffer from many health problems, especially infectious diseases, addictions and mental health problems and do so much more than age-comparable people in the general Belgian population
- the use of health care, in the form of medical consultations and medication prescriptions (mainly psychopharmaceuticals), is higher than in the general Belgian population
- health problems and health care use in the Belgian prison population do not differ that much from prisoners elsewhere in the world
- a large variability in health care use between prisons was observed, which could only partially be explained by the characteristics of the prisoners
- health care provision in Belgian prisons is concentrated on general practitioners and nurses and to a lesser extent on psychiatrists
- several flaws and shortcomings were registered/observed/mentioned and there is a generally accepted opinion that much can be improved, but financial means and human resources are lacking
- we observed that good legislation already exists, but royal decrees to implement the legislation are pending since 2005
- competences for health care in prisons are divided across federal and defederated entities hindering an integrated health care approach
- we found general acceptance to transfer the responsibility (and budget) for penitentiary health care to the Minister of Social Affairs and Public Health and to reorganize penitentiary health care into a more performant system

Some issues we encountered are discussed more in depth below.



Many and diverse health problems

From the literature it became clear that prisoners suffer from a range of health problems, which are often interrelated and also related to broader social circumstances. Prisoners are often characterized by a low education level, low activity level and high unemployment – before incarceration. Many have already been in touch with the Ministry of Justice while underage. They also often have limited social ties. Most inmates come from broken families, characterized by exclusion, neglect and poverty. Forty percent of them were living alone before being jailed, and only 20% of the jailed men were married before their incarceration^{108, 109}. Inmates already experienced processes of marginalization before being incarcerated¹¹⁰.

These demographic and social elements impact health care. Apart from language, elements such as culture and ethnic origins^{111, 112}, social class¹¹³⁻¹¹⁵, gender¹¹⁶ and age¹¹⁷ impact the way people conceive notions such as health and illness. Further, the difference between physicians and their patients with regard to social class may have a significant negative impact on communication between both parties¹¹⁸.

Further, inmates often belong to society's less powerful social groups. A low degree of (social) power relates to fatalistic conceptions of health and illness¹¹⁹. This is also referred to as an 'external locus of control'. People with an external locus of control perceive health and illness as something happening to them and on which they have no grip. Apart from the impact of the social background of incarcerated persons on their capacity to take an active role in their health, the specific context of the prison might increase their perception of having little control over their health. De Maere et al.¹²⁰ state that the inmate's social origins explain the higher prevalence of 'social diseases' such as tuberculosis for example, which is estimated to be 5 to 10 times higher than in the main population.

Therefore, we recommend the implementations of a broad multidimensional, interdisciplinary and integrated health care approach. Such an approach implies the following elements:

- The installation in every prison of an interdisciplinary health care team composed of general practitioners, nurses, physiotherapists, occupational therapists, dentists, psychologists, psychiatrists, and social workers under the direction of medical director.
- The implementation of a comprehensive assessment at prison entry of actual and potential health care problems and needs, including psycho-social problems, drug abuse, suicide risk and the systematic screening of infectious diseases. This initial assessment can be organized in two steps: within the first 24h of incarceration, the urgent health needs are assessed; within the 7 first days of incarceration, a more comprehensive assessment is completed. The interRai mental health for correctional facilities^{cc} and other already existing validated instruments can be used. This initial assessment will serve as the basis for defining an individual-tailored healthcare pathway.
- Ensuring continuity of care: The interdisciplinary approach and treatment is pursued during incarceration, including a seamless cooperation and information exchange between health care providers inside and outside prisons. It is of utmost importance that health assessments performed in the community before incarceration are available to health care providers in prisons and that assessments performed in prison are available to providers in the community after release. Also, initiated treatments must continue across community and prison settings. Hereto, a well performing electronic patient file in prisons is needed and which is able to communicate with outside systems, as well as good communication between the Justice Department and medical teams in prison regarding the expected release of prisoners. A key element to continuity of care will also be the integration of prisoners in the general health insurance system; France and Scotland are a good example in this regard.

^{cc} <http://www.interrai.org/mental-health-correctional-facilities.html>



Minimum workforce standards

Despite the fact that countries having gone through the transfer have all attempted to increase their prison health care workforce post-transfer, it remains difficult to find any publicly available minimum workforce standards for the different specialties that could be adapted to the Belgian situation. French guidelines¹²¹ offer an indication depending on the size of the prison or the nature of the prison but do not provide the reader with any explanation on the basis or justification of such figures.

The CPT often recommends a minimum of one nurse per 50 prisoners, one GP per 200 prisoners and one psychiatrist per 400/500 prisoners. However, these are purely given as broad guidelines and remain unpublished to date.

The recent, previously mentioned Scottish report¹⁰¹ published in 2017 highlighted the identification of national minimum workforce standards at all levels, as a priority in order to minimize differences between prisons that still exist six years after their transfer.

The workforce may no longer be based on norms from the general population, but on health care needs of prisoners taking the specific prison environment into account. Extending the current health care workforce minimally to the CPT standards seems reasonable to start with and careful monitoring of (unmet) health care needs in coming years can be used to further adapt the workforce.

Central steering service for penitentiary health care

There is a central service responsible for health care organization and coordination in Belgian prisons. This service is led by a single chief of services (lawyer), assisted by a full-time nurse coordinator and three MDs as adjuncts (each for one day per week). However this service consists of only 5.6 FTE and is clearly understaffed in order to be able to fulfil all aspects of its mission (e.g. health prevention and promotion, health services monitoring, or epidemiology).

In the future, this service must be expanded by increasingly more diverse professionals and must come under the lead of a medical doctor. Expertise/competencies on health care organization, nursing, psychiatry, epidemiology, economics, pharmacological services, clinical guidelines and quality assurance need to be present at the DGZG/SSSP. In addition, a clear job description for each staff member needs to be written.

Fragmented (competences for the organization of) care

Care provision in prisons is a shared competence of the federal government and defederated entities. Whereas the federal government is competent for curative care, both preventive care and health promotion are primarily a competence of the Communities. On top of that, there are several private organizations offering prevention and health promotion related activities in local settings. This fragmentation of competences and multitude of parties results in a patchwork of services that is difficult to coordinate.

Implementation of a new function of health care services coordinator in each prison is therefore essential. The mission of such a coordinator, referring directly to the central level, will be to articulate smoothly priorities, activities (inside and outside prisons,) and information of all parties, i.e. the prison health care services, the prison direction, the hospital directions, and the external actors active in prison.



Complex and slow implementation of necessary legislation

Although a good legislative framework is available in the 'Basic law on prisons' since 2005, and although Belgium was urged several times by international control bodies to fully implement this law, the necessary Royal Decrees still have not been issued. A bit of the same applies to the of the OPCAT protocol^{dd} ratification by Belgium: Belgium signed this protocol in 2005, but Belgian parliament failed to ratify it and is therefore hindering the implementation of a national preventive mechanism that would inspect the prisons on a regular basis.

The 'Basic law on prisons' and the OPCAT need an urgent implementation.

Prisoner involvement

An integrated holistic care approach is not an issue for health care providers only. Prisoners themselves can also play a role and be involved in health care provision. Peer to peer prisoner involvement has been demonstrated as effective (e.g. in reducing the risk of HIV transmission, risky behaviours, etc.) and being a peer deliverer was associated with positive effects and empowerment; it gives prisoners responsibility and prepares them for release and reintegration¹²²⁻¹²⁷.

Therefore we recommend to support as much as possible peer-to-peer health interventions, particularly in the field of health prevention and promotion.

Variation in health care use between prisoners

In 2015, the overall rate of medical consultations in Belgian prisons was 23.7 per person-year. The consultation rate was lower in individuals with no residence permit (by 14%) or who were an unregistered EU citizen (by 23%) in comparison with those prisoners with a legal residence status. This is a striking finding, although such differences in health care use has also been observed outside prison¹²⁸. One contributing factor may be language barriers, as speaking another language than French and Dutch was also a factor associated with a lower consultation rate. Different health seeking behaviours may also be at stake.

Ensuring that all individuals with no resident status and/or do not speak one of the national languages benefit from an equitable access to health care is an important step forward. This could be facilitated by the distribution of multilingual leaflets on patient rights and on the functioning of health services, and by the use of distance-based translators during medical consultations.

The consultation rate was also significantly higher (relative increase of 30%) in new prisoners than in prisoners whose incarceration had started before the observation year, even after adjustment for the time spent in prison during the observation year. This rate remained higher when the first consultation at entry of new prisoners was discarded (relative increase of 15%). The higher consultation rate of new prisoners might reflect their greater health needs in comparison with prisoners who had been incarcerated for a longer time.

Part of the individual variation in health care use could not be explained with the data at our disposal, reflecting either more morbidity or varying healthcare seeking behaviours. Ensuring that the individualized care path based on the assessment of individual health needs is duly followed by all health care providers is important for an equitable access to health care.

^{dd} http://www.apc.ch/en/opcat_pages/opcat-ratification-6/?pdf=info_country



Variation in health care use between prisons

A high variability in consultation rates was observed across prisons, even after accounting for differences in prisoner populations. Even the rate of psychiatric consultations in mentally ill offenders displayed large variations. Likewise, our analysis also reported large variations among prisons in terms of medication prescriptions. This heterogeneity may reflect a different prison culture and management, a different organization of the health services, varying therapeutic options by medical providers, a different medical offer, or variations in the case-mix of patients. For example, the higher % of prisoners being prescribed tuberculosis treatment in Brugge and St-Gilles could be linked to the fact that these two prisons are both reference centres. However, this does not explain the higher use % in Beveren as compared to other prisons, and the low % in Lantin which is also a reference centre. The higher % of prisoners using opioid substitutes in Lantin and Huy could be explained by the organization of a specific medical consultation for addicted people. The SUBANOP study¹²⁹ also reported that the provision of psychosocial support for prisoners for substitution treatment varies a lot among prisons.

At least, the large variation across prisons suggests that health care in each prison is a kind of isolated ecosystem. An in-depth investigation into the causes of variations in health care use across prisons was beyond the scope of this study, but during site visits and stakeholder meetings we encountered some witnesses who support this hypothesis (e.g. one GP said that he had stopped prescribing benzodiazepines, but his colleagues from the same prison had not done so; a psychiatric care team made their own electronic patient file and did not want to use the general Epicure application; orthopaedic surgeons refused to treat prisoners that were transferred from other prisons to one of the CMCs; six hospital beds in a CMC were shut down due to shortage of security officers; payment modalities/agreements can vary across providers and prisons; the provision of GPs, in principle roughly estimated at two hours per prisoner per year by the central management, was variable across prisons; etc.).

Our results clearly demonstrate that health care delivery and/or use is heterogeneous across prisons, putting the question of equity in prison health care at stake.

This finding emphasizes the need to harmonize health care across prisons. Generating clinical and organizational guidelines would be a great step forward. Many international clinical and organizational guidelines for prison health are available, and could be easily adapted for the Belgian context (see Appendix 11). A good example of an organizational guideline is the 'Guide Méthodologique' in France. Providing health care professionals in prison with specific training on the basis of these guidelines will be important. Finally, monitoring the application of recommendations of good practice (e.g. by local audits or by feedback on prescriptions) should be implemented in order to identify difficulties early on and to propose solutions.

High utilization of psychopharmaceuticals

The proportion of patients receiving anti-psychotics (21%), anti-depressants (25%) and anxiolytics (31%) were high. Such high percentages were observed in all types of prisoners, i.e. not specifically in mentally ill offenders. Whether all the treatments were prescribed appropriately is unknown in the absence of confirmed clinical diagnosis. A 'cultural' component may also play a role in the prescription behaviour: Beyens & Boone¹³⁰ studied Belgian prisoners who were located in the prison of Tilburg, the Netherlands, where Dutch health care providers were in charge of their health care. In that study, it was reported that the prescription rates of psychopharmaceuticals were much lower according to the interviewed prisoners.

But the problem should be considered seriously as identifying prisoners with mental illness and administering treatment in prison have important protective effects against reoffending¹³¹.

In contrast, relatively low human resources are currently allocated to the management of mental health problems. We recommend to expand the human resources available for the management of mental health diseases (see the composition of the interdisciplinary team) and that non-pharmacological approaches be considered to prevent or treat mental health diseases.



Low and varying treatment of drug dependence

The prescription of treatment for opioid dependence was much lower than expected (7% of prisoners), although this was variable across prisons (the figures in Huy and Marche are close to 15%). For example, a survey of self-reported opiate use in Belgian prisons in 2008 mentioned 32% of users¹³². According to the European Monitoring Centre for Drugs and Drug Addiction, the lifetime prevalence of illicit drug use is reported to be very high among prisoners, up to 50% for cocaine, heroin and amphetamines¹³³. The low prescription of substitution treatment is alarming and is in clear violation of international human rights law and minimum standards on the treatment of prisoners¹³⁴.

In spite of the high prevalence of this health problem, treatment, prevention and harm reduction programs remain embryonic in Belgian prisons^{135, 136}. Strikingly, Carael et al. in 2012 reported that of 10% of prisoners who were on a drug substitution treatment upon admission, only half continued that treatment in prison¹³⁷. Similarly, in 2009 Todts et al. reported that 18.5% of prisoners said they had to stop their substitution treatment in prison (dictated by the medical personnel)⁶⁴. *To improve prisoner health and reduce the rate of reoffending, there is an urgent need to define and apply a strong and efficient program to promote substitution treatment and reduce harm*¹³⁴. The FPS Public Health is currently in the process of setting up a pilot program in the prisons of Berkendael, Hasselt and Lantin which could generate very useful information. Defining the elements of such an approach can also be based on the international scientific literature. For example, the effectiveness of opioid substitution therapy interventions has been reviewed in many systematic reviews¹³⁸⁻¹⁴⁶.

Detection and treatment of infectious diseases

For infectious diseases, the proportion of patients being treated was much higher than in the general population. In 2006, it was reported that the incidence of TB detection in the prison population was more than 10 times higher than in the general population¹⁴⁷. In our study, between 0.48% and 1.05% of prisoners received anti-tuberculosis treatments in 2015. Of course, figures from a prison setting are a mixture of incident and prevalent cases as well as preventive therapy, which hampers a true comparison with

national figures (the incidence of tuberculosis is 0.0088% per year in Belgium¹⁴⁸).

With regard to HIV, there were 15,266 patients with a medical follow-up in Belgium in 2015, which corresponds to a proportion of 0.17% of the adult population¹⁴⁹. In the prison population, the proportion of treated prisoners was between 0.43% and 0.52% on average. In 2008, HIV prevalence in prison was reported to be 1%, i.e. five times higher than in the general population¹⁵⁰. Based on our analysis, this multiplicative factor seems to have remained quite constant (around 4). For chronic hepatitis C, between 0.12% and 0.34% of prisoners were prescribed a treatment in 2015.

However, the proportion of untreated prisoners for these pathologies is unknown but might be substantial. For example, the frequency of HIV infection in prisoners was somewhat higher in neighbouring countries (France 2010: 2%; Ireland 2011: 1.9%; Luxemburg 2014: 2.2%; Spain 2010: 1.2%; UK 2014: 0.6%)¹⁵¹. It has also been reported that the rate of HCV infection in prison ranges from 3.1% to 38%^{80, 151-154}. Although, until recently, the treatment in Belgium was only recommended for advanced stages of hepatitis, the % of treatment seems very low in comparison with what would have been expected. A number of explanations for missed treatment opportunities in Belgian prisons can be put forward.

First, screening is not standardized and not systematic, or prisoners may be unaware of it. In 75% of the studied prisons (26/35 responded to the survey), TBC screening is the only type of screening being systematically offered when inmates enter the prison. Only six prisons propose to screen inmates for Hepatitis and HIV at entry. During the inmates' stay in prison, TBC screening is again systematically proposed in all surveyed prisons. Additionally, 50% of the surveyed prisons offer screening for hepatitis and HIV. Furthermore, the study of Michel et al.¹³⁶ found that the availability of systematic HIV testing was only 18% in Belgian prisons. We do not have in-depth insight into why screening rates are that low.

Second, in case of a positive screening, the necessary treatment is not necessarily implemented either for logistical reasons (e.g. when the length of stay of the prisoner is unknown) or budgetary reasons (e.g. treatment for hepatitis C is very expensive and currently the budget for health services in prison is closed).



Not only for prisoners, but for public health at large, this situation must be rapidly improved.

We recommend the urgent definition of clear guidelines on when, how, whom and what type of diseases have to be screened and what has to be done when screening results are positive. An independent monitoring of screening performance must be implemented.

Hospital care

Currently prisoners can be hospitalized in two medical centres (Brugge and St-Gilles), located within prisons walls and in a secured wing of CHR La Citadelle in Liège. Additionally many local hospitals are involved as well to meet the hospitalizations needs of prisoners.

It became clear that this situation and organization of secondary care has shortcomings, such as organizing transport to the CMCs, outdated and underused equipment in the CMCs, unwillingness of specialists to go into prisons and unwillingness of prisoners to be transferred to a CMC. Moreover, local hospitals remain needed for emergency situations.

In the final stakeholder consultation, there were divergent opinions on the optimal organization of secondary care. In addition we did not find a 'best' scenario or strong evidence base for any of them in the other countries we studied or in the literature.

Nevertheless, taking into account that currently already 112 hospitals are involved more or less in specialist somatic care for the prisoners of 35 prisons, *we recommend that all secondary care is best organized in a limited number of local hospitals, linked to a (cluster of) nearby prisons, and to reform the current CMCs into settings for rehabilitation purposes and geriatric care. The secured unit of CHR La Citadelle Liège could be kept as the place for secondary care for highly dangerous prisoners.*

Quality of care

We have no data on the extent to which the health care needs of prisoners are met by the current health care provision (e.g. how many requests by prisoners to see a GP are denied?), neither do we have quantitative data on the appropriateness, quality and effectiveness of the current health care provision. But from interviews and stakeholder consultations, as well as from reports from prison surveillance committees, we learned that the current health care provision is insufficient and inadequate and health care needs are not fully met. However, it is important that policy makers do not have to rely on subjective views only, but also can rely on systematically gathered data.

Therefore it is of utmost importance that a set of quality and performance indicators is developed and integrated in the electronic patient files. Next to this, periodical inspection by regular health care control bodies is needed.

Telehealth

The prison setting is characterized by difficult entry and exit procedures and by many security measures. Telehealth is a way to reduce these barriers. Many forms of telehealth exist and can be used in diagnosis and therapy modalities, as well as screening, prevention and health promotion tools. Telehealth applications were regarded by stakeholders as a promising way to deliver care and can be part of all types of care. In addition, in the literature there is much evidence that e-health is feasible and acceptable in prison settings and with promising results¹⁵⁵⁻¹⁶⁸. In some Belgian prisons, the PrisonCloud digital infrastructure has already been installed, making pilot-projects with telehealth possible.

It is certainly worth to further investigate the possibilities and effectiveness of telehealth applications within the Belgian penitentiary health care context.



Data collection

During the study we encountered much difficulty in finding and accessing data on health problems, health care provision and financing; all of the data we found lacked sufficient detail and contained some inconsistencies.

There is an absolute need to set up monitoring boards that are reliable, comprehensive, up-to-date and useful for both health practitioners and managers. Before an in-depth analysis of health care needs and use, and costs calculations can be performed, an adequate registration time is needed (minimal 1 year).

A look at the current budget

Site visits, stakeholder consultations and reports from surveillance committees revealed that the current budget is perceived as insufficient to provide quality health care. There is shortage of human resources, up-to-date health care equipment and infrastructure, lack of training possibilities, lack of career incentives, etc.

Moreover, there appears to be continuous central pressure to cut costs. Furthermore, according to the annual report of DG-EPI, there was a reduction in medical personnel from 244.45 FTE registered in 2014 to 226.25 in 2015. All these measures and facts are thought to challenge the provision of adequate health care even more and to demotivate local health care professionals. Also there are many complaints about late payments by the government.

Besides, as a consequence, the division of competencies between federal and defederated authorities results in a division of budgets, which hinders an integrated approach to health care in all its facets.

Payment modalities

Regarding primary care services, currently most nurses are salaried, while payment for GPs mainly relies on a fixed number of hours per month. Factors such as the number of patients seen or their characteristics are not, as such, taken into consideration.

For secondary care and mental health care payment relies primarily on prospective budgets to cover for accommodation and fee for services to cover for the technical acts performed.

Although stakeholders had diverging views on what payment modalities would suit best penitentiary health care, the research team believes that the transfer offers the opportunity to evaluate new ways of payment/financing, especially for primary care, that could encourage interdisciplinary and collaborative approaches, efficiency and quality. Nevertheless, it is important to highlight that different systems can be used in combination (e.g. salaries + capitation) and therefore, they do not necessarily need to be mutually exclusive. In fact, most often, funding models rely on mixed systems.

More specifically, capitation (similar to the one already used in some “Maisons médicales”), or activity-based funding (payment decided on an episode of care basis) could be considered. Both systems rely on health care needs (patient specific or episode specific) and the necessary services/activities required to address those needs. Although, their general adoption remains at present premature, due to the lack of data on prisoner's case mix and individual costing data, such systems could facilitate the introduction of better incentives for an efficient interdisciplinary and collaborative approach between all health professionals involved in primary care.

Estimations require up to date, prisoner specific clinical data, likely to have an important impact on costs (e.g. addiction, tuberculosis, hepatitis, HIV, diabetes, psychiatric illnesses, chronic diseases, etc.), as well as other variables known to have an impact on health consumption, such as length of imprisonment, age, gender, socioeconomic background (language, nationality, residence permit), and prisoner status (accused, convicted, mentally ill offender). All interventions done by all health care specialties represented in the primary care team should be carefully registered.



Monitoring of expenditure would be important but flexibility should be offered (e.g. for “outliers” or emergencies).

Changing the current payment modalities for secondary care used outside of prison may not be appropriate given the problems already faced at present to attract specialists to come into prison. Instead, considering an equivalent fee to those working with the general Belgian population and a small plus (to be incorporated in the consultation fee) to recognise the necessary transport or waiting times for entering the prison could help to address the current “attraction and retainment” problems.

We recommend the careful consideration of payment modalities that offer better incentives for an efficient multidisciplinary and collaborative approach between all health professionals involved in primary care.

The cost of the transfer

Although the research team would have liked to offer an insight into the financial impact/cost that the transfer from Justice to Health has had in those countries in which it has already taken place, no systematic search was carried out on that regard given the challenges this would pose (e.g. if any available, likely to be unpublished, grey literature). Instead, contact with experts from the countries identified as having gone through the transfer and included in our international comparison (i.e. France and Scotland) was made with regard to the existence of such evaluations.

As previously stated in this report, during this exercise the research team learnt that ‘Audit Scotland’ (<http://www.audit-scotland.gov.uk/>) had planned to conduct a review specifically on the financial implications of the transfer from Justice to NHS Scotland by the end of 2016. However, although this would have been very informative for our research, at the time of the publication of our report, the Scottish review had been postponed and will not be published before 2018.

Nevertheless, some broad figures regarding expenditure after the transfer can be brought into discussion. In May 2017, the Health and Sport Committee of the Scottish Government published a short audit report on health care in prisons¹⁰¹, which reported some interesting figures about overall expenditure: the total forecasted expenditure on prisoner health care

(excluding indirect costs of time required by management, IT services and finance services) for the first financial year after the transfer (2012-2013) was 23.5m GBP. Four years later (2016-2017), the audit reported costs of 28m GBP. In other words, an increase in expenditure of 20%.

Regarding the French experience, a report by IGAS (l’Inspection générale des affaires judiciaires) published in 2001¹⁶⁹ mentioned an increase in the financial means used for the health care of prisoners of 40% between the years 1994 and 2000.

These broad estimates should in no case be taken as the cost of the transfer since it is impossible at present to separate the weight of the transfer on the overall expenditure from the weight of other factors such as changes in the health care system or legal/political changes that would have taken place even if the transfer had not been pursued. Nevertheless, they simply provide an illustration of the fact that potential savings that could be gained via system efficiencies are unlikely to be perceived in the short term. Instead, a financial injection appears to be required in order to kick start the transfer and support the necessary organizational changes required to avoid just a pure transfer of financial means and move into an optimization of the system. Furthermore, it would have been interesting to learn how much the expenditure was in these two countries the year before the transfer and compare it with the year after the transfer (pre- and post-assessment) before moving into assessing expenditure trends (growth in this case) in the five or 10 years after the transfer. Unfortunately, this information was unavailable at the time of the publication of this report.

Our study serves to highlight the current lack of research on the impact of such transfers in terms of the health of prisoners, overall public health gains and costs. This is despite the fact that the transfer has already been in place in the countries analysed for over five years.



General

As sketched in this short report, penitentiary health care has many aspects and many parties are involved. For the reform, first of all, a **strategic plan** is needed, in which main principles and future targets are described, and that is approved and supported by Minister of Social Affairs and Public Health and the Minister of Justice, and all other Ministers involved, as well by the responsible ministers of the defederated entities.

Recapturing, main principles for the reform are:

- health care in prison must be equivalent to health care in the outside world
- health care must comply with medical ethics, in particular the respect of confidentiality and consent
- professional independence of health care providers must be guaranteed
- the so-called 'Basic law on prisons' approved in 2005 has to become in force by publishing as soon as possible the necessary Royal Decrees
- health care in prison requires an 'all government' approach and is not an isolated responsibility of the Minister of Social Affairs and Public Health and close cooperation between several ministries at federal level as well as with competent ministries at defederated level is needed
- health care provision at the local prison level needs central steering and monitoring in order to get adequate quality and more uniform approaches
- health care is multidimensional and requires a interdisciplinary approach and therefore in every prison an interdisciplinary team is installed
- to coordinate the many parties involved in penitentiary health care service a health service care coordinator is needed in each prison
- health care in prison requires a 'whole prison' approach, involving also all non-medical personnel and a healthy prison environment
- every prisoner should receive a comprehensive health assessment at prison entry as base to create an individual care plan for each prisoner
- health care is provided as much as possible within prison walls (including specialist care)
- health care professionals and organizations involved in prison health care are 'hired' from regular providers in the outside world
- health insurability rules current in the outside world should also be applied to prison health care
- continuity of care must be guaranteed, meaning that at prison entry information from the outside world is gathered and that at prison release, information is sent to health care providers outside
- e-health applications are seen as a promising way to deliver care and can be part of all types of care and should be enhanced and promoted as much as possible
- every prison, or a cluster of nearby prisons, cooperates with a nearby acute care hospital for specialized somatic care and cooperates with a nearby specialized mental health care provider for specialized mental health care (as is the case in France)
- remuneration for prison health care providers should at least be as attractive as the one in the outside world

It has to be kept in mind, that the reform will take several years and a step-wise approach is recommended and must be outlined in the strategic plan.

Phase 1. Preparation: Enforcing the central DGZG/SSSP is the first step to be taken, by appointing a general and medical director and by extending the DGZG/SSSP with competencies related to health care organization, nursing, psychiatry, epidemiology, economics, pharmacological services, clinical guidelines and quality assurance. When done, the enforced DGZG/SSSP needs to prepare the strategic plan. In this process, specific elements of the reform and new approaches should be thoroughly prepared by several working groups (staffing, payment modalities, insurability, contracts with health care providers, etc.) Simultaneously, the DGZG/SSSP needs to take measures for an adequate registration and monitoring system



for health care needs and applied interventions, so future reforms can be evaluated adequately and budget consequences can be calculated. Following this, local health care services should be enforced at least as a bare minimum to such extent that CPT minimal workforce requirements are met. Simultaneously, the DGZG together with the penitentiary health council should set up a set of clinical guidelines, adapted to the Belgian situation, and spread these across the prisons.

Phase 2. Testing and data/information gathering: An obvious first element is the introduction, in some prisons, of an interdisciplinary primary care team applying a holistic health care approach, including prevention and health promotion. The reform is implemented in 2 to 4 prisons and carefully evaluated during one year in order to adapt the reform and to develop appropriate capitation/activity based payments for primary care and to compute general budget requirements before expanding the reform to all Belgian prisons. The required budget to pursue this phase could be approximated by means of prison specific historical mean annual costs, as described in appendix 5, corrected by the additional human resource costs required to set up the interdisciplinary team, and to comply with the minimal workforce standards of the CPT. During this phase, pilot-studies could also be performed on other specific elements of the reform, such as telehealth applications.

Phase 3. Expand the reform to all prisons. Keep on monitoring processes, outputs, outcomes, and costs in order to adapt the reform to local situations and needs.

To evaluate the reform process, the strategic plan needs a well-documented time line with activities to be done and results to be reached.

Study limitations

Several limitations to this study must be mentioned. First of all, none of the direct views of prisoners themselves are incorporated and as a consequence we missed the most valuable source to know the health care needs and the extent to which they are (un)met; in addition, we do not directly know how prisoners experience the current health care organization.

We measured health care use on basis of the Epicure system and consequently our results largely depend on the extent to which health care providers accurately register their activities in that system. We do not know the registration accuracy. Moreover, the Epicure system has several shortcomings and lacks a uniform language to enter data, making data extraction and analysis very difficult. As already mentioned, the dataset at our disposal could not be used to accurately assess disease frequency. First, the diagnoses were not readily available. Second, there was uncertainty around the detection rate of pathologies and around the treatment rate of detected pathologies. However, the Epicure dataset was useful for three sets of analysis: to assess what categories of treatment were used most; to investigate the variations in prescriptions and the associated factors (see above); to assess the proportion of patients receiving highly specific medications for a set of diseases (e.g. HIV, tuberculosis, HCV, diabetes).

We selected only four countries in the international comparison and may have missed important relevant lessons from other countries such as England and Wales, which have one of the longest experience in the direct commissioning of prison health care by the Ministry of Health.

We offered an overview on 'current' spending on health care in Belgian prisons, but due to a lack of transparency and detail in the figures provided and analysed here, these should only be regarded as best estimates. Such cost data limitations together with a lack of case mix data impeded the estimation of a budget for health care that could respond adequately to health care needs.

We did not address in full medical ethics related to penitentiary health care and the difficulties that are met regarding medical independence and medical care in the best interest of prisoners versus medical care in the interest of the justice system.

Thus a lot of further research could be recommended.

Recommendations to the Belgian policymakers based on this research are published as part of the Dutch and French syntheses, which are available on the KCE website.



■ APPENDICES

APPENDICES 1 TO 10

can be found on the website of the KCE: www.kce.fgov.be

1. Gourdin G, Vyncke V, Felgueroso-Bueno F, Eechaudt V, Vander Beken T, Vander Laenen F, et al. Chapter 1. Organisation of health care in Belgian prisons. Brussel: KCE; 2017.
2. Roberfroid D, Mistiaen P, San Miguel L. Chapter 2. Health problems and health care utilization in Belgian prisons. Brussel: KCE; 2017.
3. Witkowski M, Hudson P, Batson S, Moore B, Mitchell S. Chapter 3. Systematic review of healthcare use and needs of prisoners. Brussel: KCE; 2017.
4. Dubois C, Linchet S, Mahieu C, Reynaert JF, Seron P. Chapter 4. Organization models of health care services in prisons in four countries. Brussel: KCE; 2017.
5. Gourdin G, Vyncke V, Felgueroso-Bueno F, Trybou J, Annemans L, Malfait S, et al. Chapter 5. Financial aspects of health care in Belgian prisons. Brussel: KCE; 2017.
6. Eechaudt V, Vander Laenen F, Vander Beken T. Chapter 6. Organisation of health care in Belgian prisons: legal framework. Brussel: KCE; 2017.
7. Vinck I, Mistiaen P. Chapter 7. Competences for the organisation of health care, health promotion, prevention and wellbeing issues in prisons. Brussel: KCE; 2017.
8. Schoukens P, De Weyer J. Chapter 8. Health care: the insurability of prisoners / Gedetineerden en de verzekering voor geneeskundige verzorging. Brussel: KCE; 2017.
9. Roodhooft D, Groffils L, Van Hoof S, Camaly O, Vanmaele H, Colin J, et al. Chapter 9. Health care in Belgian Prisons: Scenario building blocks. Brussel: KCE; 2017.
10. Mistiaen P, Dauvrin M, Eyssen M, San Miguel L, Vinck I. Chapter 10. Future organization of health care in Belgian Prisons; final stakeholder consultation. Brussel: KCE; 2017.



APPENDIX 11 – EXAMPLES OF GUIDELINES FOR PENITENTIARY HEALTH CARE

Académie Suisse des Sciences Médicales. 2013. Directives médico-éthiques. Exercice de la médecine auprès de personnes détenues. Berne: ASSM.

Adu-Tutu M, Shields TE. 2014. Guidelines for a Correctional Dental Health Care System. Chicago: National Commission on Correctional Health Care.

American Diabetes Association. 2000. Management of diabetes in correctional institutions. *Diabetes care* 23 (S1):S98-9.

American Diabetes Association. 2003. Management of diabetes in correctional institutions. *Diabetes care* 26 (S1):S129-30.

American Diabetes Association. 2005. Diabetes management in correctional institutions. *Diabetes care* 28 (S1):S53-60.

American Psychiatric Association. 2016. Psychiatric Services in Correctional Facilities. Arlington: American Psychiatric Association Publishing.

American Society of Addiction Medicine. 2014. Standards of Care: For The Addiction Specialist Physician. American Society of Addiction Medicine.

Araïn A, Robaeys G, Stover H. 2014. Hepatitis C in European prisons: a call for an evidence-informed response. *BMC Infectious Diseases* 14 (S6): S17

Arends MT, De Haan HA, Van 't Hoff GI. 2009. First Dutch national guidelines--pharmacological care for detained opioid addicts. *International journal of prison health* 5: 192-200

Asch SM, Damberg CL, Hiatt L, Teleki SS, Shaw R, et al. 2011. Selecting performance indicators for prison health care. *Journal of Correctional Health Care* 17: 138-49

Australian Institute of Health and Welfare. 2009. From corrections to community: a set of indicators of the health of Australia's prisoners. Canberra: AIHW.

Blair P, Knox C, Lee J, Muse M, Pinney B, Voermans P. 2014. Nurses' Scope of Practice and Delegation Authority National Commission on Correctional Health Care. Chicago: National Commission on Correctional Health Care.

Bollini P, Laporte JD, Harding TW. 2002. HIV prevention in prisons. Do international guidelines matter? *European Journal of Public Health* 12(2): 83-9

Bott QD. 2016. ASHP Guidelines on Pharmacy Services in Correctional Facilities. *American Journal of Health System Pharmacy* 73(21): 1784-90

Brutus L, Mackie P, Millard A, Fraser A, Conacher A, et al. 2012a. Better health, better lives for prisoners: A framework for improving the health of Scotland's prisoners. Volume 1: the framework. Edinburgh: Scottish Prison Service.

Brutus L, Mackie P, Millard A, Fraser A, Conacher A, et al. 2012b. Better health, better lives for prisoners: A framework for improving the health of Scotland's prisoners. Volume 2: supporting material for the framework. Edinburgh: Scottish Prison Service.

Bulbulia A, Berger J. 2008. Guidelines for the prevention and treatment of HIV in arrested, detained and sentenced persons. *Southern African Journal of HIV Medicine*: 21-33.

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): 767-83.

Center for Substance Abuse Treatment. 2005. Substance Abuse Treatment for Adults in the Criminal Justice System. A treatment Improvement Protocol TIP44. Rockville: Substance Abuse and Mental Health Services Administration.

Centers for Disease Control and Prevention. 2006. Prevention and control of tuberculosis in correctional and detention facilities: recommendations from CDC. *Morbidity and Mortality Weekly Report. Recommendations and reports* 55: 1-44



Centers for Disease Control and Prevention. 2003. Prevention and Control of Infections with Hepatitis Viruses in Correctional Settings. Morbidity & Mortality Weekly Report 52(1):1-44.

Centers for Disease Control and Prevention. 2006a. Prevention and Control of Tuberculosis in Correctional and Detention Facilities: Recommendations from CDC. Morbidity and Mortality Weekly Report 55(9):1-64.

Centers for Disease Control and Prevention. 2006b. Prevention and Control of Tuberculosis in Correctional and Detention Facilities: Recommendations from CDC. Morbidity and Mortality Weekly Report 55: 1-44

Centers for Disease Control and Prevention. 2015. Sexually Transmitted Diseases Treatment Guidelines 2015. Special populations. Morbidity and Mortality Weekly Report 64(3): 1-140.

Chariot P, Martel P, Penneau M, Debout M. 2008. Guidelines for doctors attending detainees in police custody: a consensus conference in France. International Journal of Legal Medicine 122(1): 73-6.

Chemlal K, Echard-Bezault P, Deutsch P. 2014. Promotion de la santé en milieu pénitentiaire. Référentiel d'intervention. Saint-Denis: Inpes.

Cohen J. 2001. IRB/FDA requirements relevant to HIV/AIDS clinical trials in correctional settings. The AIDS Reader 11(1): 41-2

Council of Europe. 2006. Recommendation Rec(2006)2 of the Committee of Ministers to member states on the European Prison Rules.

Department of Health. 2006. Clinical Management of Drug Dependence in the Adult Prison Setting. London: Department of Health.

Dienst Justitiële Inrichtingen. 2017. Vademecum. Verstrekkingenpakket medische zorg van de Dienst Justitiële Inrichtingen. Utrecht: Dienst Justitiële Inrichtingen.

Elger BS. 2008. Medical ethics in correctional healthcare: an international comparison of guidelines. The Journal of Clinical Ethics 19(3): 234-48.

Elger BS, Ritter C, Stöver H. 2017. Emerging Issues in Prison Health. Dordrecht: Springer Netherlands.

Enggist S, Møller L, Galea G, Udesen C. 2014. Prisons and health. Copenhagen: WHO Regional Office for Europe.

European Committee for the Prevention of Torture. 2015. CPT standards. Strasbourg: European Committee for the Prevention of Torture.

European Monitoring Centre for Drugs and Drug Addiction. 2012. Prisons and drugs in Europe: the problem and responses. Luxembourg: Publications Office of the European Union.

Federal Bureau of Prisons. 2003. Clinical Practice Guidelines. Management of Headache. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2008a. Clinical Practice Guidelines. Guidelines for the Prevention and Treatment of Hepatitis A. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2008b. Clinical Practice Guidelines. Ophthalmology guidance. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2011a. Clinical Practice Guidelines. Sexually Transmitted Disease Treatment Tables. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2011b. Clinical Practice Guidelines. Stepwise Approach for Detecting, Evaluating, and Treating Chronic Hepatitis B Virus Infection. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2012a. Clinical Practice Guidelines. Management of Food Allergies. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2012b. Clinical Practice Guidelines. Management of Methicillin-Resistant Staphylococcus aureus (MRSA) Infections. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2012c. Clinical Practice Guidelines. Preventive Dentistry: Oral Disease Risk Management Protocols. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2013a. Clinical Practice Guidelines. Anticoagulation Protocol. Washington DC: Federal Bureau of Prisons.



Federal Bureau of Prisons. 2013b. Clinical Practice Guidelines. Antimicrobial Stewardship Guidance. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2013c. Clinical Practice Guidelines. Management of Asthma. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2013d. Clinical Practice Guidelines. Nutrition Management After Bariatric Surgery. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2013e. Clinical Practice Guidelines. Preventive Health Care. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2013f. Clinical Practice Guidelines. Seasonal Influenza Guidance. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2014a. Clinical Practice Guidelines. Detoxification of Chemically Dependent Inmates. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2014b. Clinical Practice Guidelines. Lice Protocol. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2014c. Clinical Practice Guidelines. Management of Major Depressive Disorder. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2014d. Clinical Practice Guidelines. Medical Management of Malnutrition (Undernutrition). Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2014e. Clinical Practice Guidelines. Prevention and Management of Acute and Chronic Wounds. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2015a. Clinical Practice Guidelines. Evaluation and management of osteoarthritis of the hip and knee. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2015b. Clinical Practice Guidelines. Management of Hypertension. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2015c. Clinical Practice Guidelines. Management of tuberculosis. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2015d. Clinical Practice Guidelines. Pharmacological management of schizophrenia. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2016a. Clinical Practice Guidelines. Management of bipolar disorder. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2016b. Clinical Practice Guidelines. Management of HIV infection. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2016c. Clinical Practice Guidelines. Management of varicella zoster virus (VZV) infections. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2016d. Clinical Practice Guidelines. Medical management of transgender inmates. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2016e. Clinical Practice Guidelines. Responding to foodborne illness outbreaks. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2016f. Clinical Practice Guidelines. Zika virus. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2017a. Clinical Practice Guidelines. Evaluation and management of chronic hepatitis C virus (HCV) infection. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2017b. Clinical Practice Guidelines. Management of diabetes. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2017c. Clinical Practice Guidelines. Medical management of exposures: HIV, HBV, HCV, human bites, and sexual exposures. Washington DC: Federal Bureau of Prisons.

Federal Bureau of Prisons. 2017d. Clinical Practice Guidelines. Scabies protocol. Washington DC: Federal Bureau of Prisons.



Federal Bureau of Prisons Health Services. 2016. NATIONAL FORMULARY Part I. Washington DC: Federal Bureau of Prisons.

Fiscella K. 2015. Guide to Developing and Revising Alcohol and Opioid Detoxification Protocols. Chicago: National Commission on Correctional Health Care

Fovet T, Amad A, Adins C, Thomas P. 2014. Psychotropes en milieu pénitentiaire : de la fiole à l'AMM. La Presse Médicale 43(5): 520-28

Gaubert M, Tarlevé E. 2014. Addictions: les pratiques professionnelles concernant la continuité des soins des personnes détenues, l'articulation entre les professionnels de santé de la prison et du milieu ouvert : de l'analyse des pratiques d'un réseau à l'élaboration de recommandations partagées. Nantes: Fédération Addiction.

Georgiou M, Souza R, Holder S, Stone H, Davies S. 2015. Standards for Prison Mental Health Services. London: Quality Network for Prison Mental Health Services.

Greifinger R. 2007. Public Health Behind Bars From Prisons to Communities. Dordrecht: Springer.

Hayes LM. 2013. Guide to Developing and Revising Suicide Prevention Protocols Within Jails and Prisons. Baltimore: National Center on Institutions and Alternatives.

Her Majesty Inspectorate of Prisons for Scotland. 2015. Standards for Inspecting and Monitoring Prisons in Scotland. Edinburgh: HM Inspectorate of Prisons for Scotland.

Hsu K, Jolin K, Miller J, Lincoln T, Lubelczyk R, Nijhawan AE. 2011. Managing STDs in the Correctional Setting: A Guide for Clinicians. 2nd edition. Boston/ NCSD.

International Council of Nurses. 2011. Nurses' role in the care of detainees and prisoners. Geneva: ICN.

Kastelic A, Pont J, Stöver H. 2009. Opioid Substitution Treatment in Custodial Settings. A Practical Guide. Oldenburg: BIS-Verlag.

Kipping RR, Scott P, Gray C. 2011. Health needs assessment in a male prison in England. Public Health 125(4): 229-33.

Kwaliteitsinstituut voor de Gezondheidszorg CBO. 2008. Richtlijn Medicamenteuze zorg aan gedetineerde verslaafden. Utrecht: Kwaliteitsinstituut voor de Gezondheidszorg CBO.

Lehtmets A, Pont J. 2014. Prison health care and medical ethics. A manual for health-care workers and other prison staff with responsibility for prisoners' well-being. Strasbourg: Council of Europe.

Lorber DL, Chavez S, Dorman J, Fisher LK, Guerken S, et al. 2004. Diabetes management in correctional institutions. Diabetes care 27(S1):S114-21.

Maloney DM. 2003. New guidelines for protection of subjects who are prisoners. Human research report 18(7): 3.

Marshall T, Simpson AI, Stevens A. 2000. Toolkit for health care needs assessment in prisons. Birmingham: University of Birmingham.

Marshall T, Simpson AI, Stevens A. 2001a. Health Care in Prisons, pp. 791-946.

Marshall T, Simpson S, Stevens A. 2001b. Health care needs assessment in prisons: a toolkit. Journal of Public Health Medicine 23(3): 198-204.

Martin MS, Colman I, Simpson AI, McKenzie K. 2013. Mental health screening tools in correctional institutions: a systematic review. BMC Psychiatry 13: 275.

Michel L, Maguet O. 2005. Traitements de substitution en milieu carcéral: guide des bonnes pratiques. Encéphale 31(1): 92-7.

Ministère de la Justice, Ministère des Affaires sociales et de la Santé. 2012. Guide méthodologique. Prise en charge sanitaire des personnes placées sous main de justice. Paris : République Française.

Ministère de la Santé et de la protection sociale, Ministère de la Justice. 2004. Guide méthodologique relatif à la prise en charge sanitaire de personnes détenues. Paris: République Française.



Ministère de la Santé et des Sports, Ministère de la Justice et de Libertés. 2010. Politique de santé pour les personnes placées sous main de justice. Plan d'actions stratégiques 2010 - 2014. Paris: République Française.

Møller L, Stöver H, Jürgens R, Gatherer A, Nikogosian H. 2007. Health in prisons. A WHO guide to the essentials in prison health. Copenhagen: WHO Regional Office for Europe.

National Commission on Correctional Health Care. 2014a. Guidance for Disease Management in Correctional Settings. Opioid Detoxification. Chicago: NCCHC.

National Commission on Correctional Health Care. 2014b. Guidelines for a Correctional Dental Health Care System. Chicago: NCCHC.

National Commission on Correctional Health Care. 2014c. Standards for health services in prisons. Chicago: National Commission on Correctional Health Care.

National Commission on Correctional Health Care. 2016. Substance Use Disorder Treatment for Adults and Adolescents. Chicago: National Commission on Correctional Health Care.

National Hospice and Palliative Care Organization. 2009. Quality Guidelines for Hospice and End-of-Life Care in Correctional Settings. Alexandria (VA): National Hospice and Palliative Care Organization.

National Institute for Health and Care Excellence. 2016. Physical health of people in prison: assessment, diagnosis and management of physical health problems. London: National Institute for Health and Care Excellence.

National Institute for Health and Care Excellence. 2017. Mental health of adults in contact with the criminal justice system. Identification and management of mental health problems and integration of care for adults in contact with the criminal justice system. NICE Guideline 66. London: NICE.

National Institute on Drug Abuse. 2014. Principles of Drug Abuse Treatment for Criminal Justice Populations. A Research-Based Guide. Rockville: National Institutes of Health.

National Task Force on the Use of Restraints with Pregnant Women under Correctional Custody. 2012. Best Practices in the Use of Restraints with

Pregnant Women and Girls Under Correctional Custody. Washington DC: U.S. Department of Health and Human Services.

Neff MJ. 2003. CDC Updates Guidelines for Prevention and Control of Infections with Hepatitis Viruses in correctional settings. American Family Physician 67(12): 15

Nouiouat R, Mannoni M. 2011. Guide de l'intervention en milieu pénitentiaire destiné aux acteurs associatifs de la lutte contre le SIDA. Paris: SIDACTION.

Olivan Gonzalvo G. 2002. Adolescentes delincuentes: problemas de salud y recomendaciones sanitarias para centros de reforma juvenil. Anales Espanoles de Pediatria 5754º: 345-53

Penitentiaire Gezondheidsraad. 2007. Advies 2007/1 – Bevallig tijdens detentie. Brussel: FOD Justitie.

Penitentiaire Gezondheidsraad. 2008a. Advies 2008/1. Overbrenging naar een ziekenhuis of verzorgingsinstelling Brussel: FOD Justitie.

Penitentiaire Gezondheidsraad. 2008b. Advies 2008/2. Nadere regels voor het bezoek van een door een gedetineerde vrijgekozen arts. Brussel: FOD Justitie.

Penitentiaire Gezondheidsraad. 2008c. Advies 2008/3 betreffende de vooruitzichten inzake de ontwikkeling van de gezondheidszorg in de gevangenis. Brussel: FOD Justitie.

Penitentiaire Gezondheidsraad. 2009a. Advies 2009/1 van de Penitentiaire Gezondheidsraad aan de Minister van Justitie betreffende de hervorming van de gezondheidszorg in de gevangenissen. Brussel: FOD Justitie.

Penitentiaire Gezondheidsraad. 2009b. Advies 2009/2 betreffende "weigering van behandeling en behandeling zonder toestemming van de gedetineerde patiënt". Brussel: FOD Justitie.

Penitentiaire Gezondheidsraad. 2009c. Advies 2009/4 betreffende ontwerp van ministeriële omzendbrief inzake het gebruik van de huisapotheek. Brussel: FOD Justitie.



Penitenciaire Gezondheidsraad. 2012a. Advies 2012/01 betreffende psychiatrische zorg in de gevangenis. Brussel: FOD Justitie.

Penitenciaire Gezondheidsraad. 2012b. Advies 2012/02 betreffende de gedetineerde patiënt bij levenseinde. Brussel: FOD Justitie.

Pilkinton PD, Pilkinton JC. 2014. Prescribing in prison: minimizing psychotropic drug diversion in correctional practice. *Journal of Correctional Health Care* 20(2): 95-104.

Projet BIG. 2013. Formulaires uniformisés.

Public Health England. 2014a. Health and Justice Health Needs Assessment Toolkit for Prescribed Places of Detention. Part 1: Introduction and getting started. London: Public Health England.

Public Health England. 2014b. Health and Justice Health Needs Assessment Toolkit for Prescribed Places of Detention. Part 2: Health and Justice Health Needs Assessment Template: Adult Prisons. London: Public Health England.

Ranieri R, Sommella J, D'Angelo C, Nigro F, Poccobelli M, et al. 2015. La terapia antiretrovirale nel paziente ristretto: tra linee guida e realtà degli istituti penitenziari. *Le infezioni in medicina* 23: 148-54

Reeves R. 2012. Guideline, education, and peer comparison to reduce prescriptions of benzodiazepines and low-dose quetiapine in prison. *Journal of Correctional Health Care* 18(1): 45-52

Restellini JP, Berner-Chervet D, Grutter P, Guillod O, Osterwalder J, et al. 2004. The exercise of medical activities in respect to detained persons. Medical-ethical guidelines of the Swiss Academy of Medical Sciences. *Swiss Medical Weekly* 134(9-10): 136-9.

Ritter C. 2012. Maladies transmissibles et addictions en prison. *Vademecum*. Berne : Office fédéral de la santé publique.

Sakellidis EI, Spiliopoulou CA, Papadodima SA. 2009. Health care provision in prisons: A review on European and international guidelines. *Acta Clinica Belgica* 64(5): 399-405.

Salize HJ, Dreßing H, Kief C. 2007. Mentally Disordered Persons in European Prison Systems - Needs, Programmes and Outcome (EUPRIS). Mannheim: Central Institute of Mental Health.

Sander G. 2016. HIV, HCV, TB and harm reduction in prisons. Human Rights, Minimum Standards and Monitoring at the European and International Levels. London: Harm Reduction International.

Santé Prison Suisse. 2014a. Health in custodial settings. Information for inmates. Fribourg: Swiss Red Cross.

Santé Prison Suisse. 2014b. Santé et privation de liberté. Prévention et réduction de maladies transmissibles en privation de liberté. Informations pour le personnel pénitentiaire. Berne: Swiss Red Cross.

Schiff GD, Shansky R. 2006. Continuous Quality Improvement. Chicago: National Commission on Correctional Health Care

Scottish Government. 2011. Health Board Provision of Healthcare in Prisons (Scotland) Directions 2011. Edinburgh: Scottish Government.

Senior J, Forsyth K, Walsh E, O'Hara K, Stevenson C, et al. 2013. Health and social care services for older male adults in prison: the identification of current service provision and piloting of an assessment and care planning model. *Health Services and Delivery Research* 1(5):1-160.

South African Medical A. 2002. SAMA ethical guidelines on HIV research, education, prison life and public campaigns. *South African Medical Journal* 9(7): 508.

Spaulding AC, Miller J, Trigg BG, Braverman P, Lincoln T, et al. 2013. Screening for sexually transmitted diseases in short-term correctional institutions: summary of evidence reviewed for the 2010 Centers for Disease Control and Prevention Sexually Transmitted Diseases Treatment Guidelines. *Sexually Transmitted Diseases* 40(9): 679-84.

Stern MF. 2016. Patient safety. Chicago: National Commission on Correctional Health Care

Stover H. 2016. Drug Services and Harm Reduction Practice in Prison In *Emerging issues in prison health*, ed. BS Elger, C Ritter, H Stover. Dordrecht: Springer



Strategische Adviesraad Welzijn Gezondheid Gezin. 2012. Advies over de organisatie van de hulp- en dienstverlening aan gedetineerden. Brussel: Strategische Adviesraad Welzijn Gezondheid Gezin.

Substance Abuse and Mental Health Services Administration. 2017. Guidelines for Successful Transition of People with Mental or Substance Use Disorders from Jail and Prison: Implementation Guide. Rockville: Substance Abuse and Mental Health Services Administration.

The Royal Australian College of General Practitioners. 2011. Standards for health services in Australian prisons. Melbourne: The Royal Australian College of General Practitioners.

Thigpen ML, Solomon L, Hunter SM, Ortiz M. 2001. CORRECTIONAL HEALTH CARE. Guidelines for the Management of an Adequate Delivery System. 2001 Edition. Washington: U.S. Department of Justice. National Institute of Corrections.

United Nations General Assembly. 2015. United Nations Standard Minimum Rules for the Treatment of Prisoners (the Nelson Mandela Rules). New-York: UN.

United Nations Office on Drugs and Crime. 2008. Handbook for prison managers and policy makers on women and imprisonment. Vienna: United Nations.

United Nations Office on Drugs and Crime. 2013. HIV prevention, treatment and care in prisons and other closed settings: a comprehensive package of interventions. Vienna: United Nations.

van der Meulen E, Claivaz-Loranger S, Clarke S, Ollner A, Watson TM. 2016. On Point: Recommendations for Prison-Based Needle and Syringe Programs in Canada. Toronto: Ryan University.

Vinkeles Melchers NV, van Elsland SL, Lange JM, Borgdorff MW, van den Hombergh J. 2013. State of affairs of tuberculosis in prison facilities: a systematic review of screening practices and recommendations for best TB control. PloS One 8(1): e53644

Wakeen BA. 2015. Therapeutic Diet Guidelines for Correctional Institutions. Chicago: National Commission on Correctional Health Care.

Wang EA, Aminawung JA, Ferguson W, Trestman R, Wagner EH, Bova C. 2014. A tool for tracking and assessing chronic illness care in prison (ACIC-P). Journal of Correctional Health Care 20(4): 313-33.

Wanlin M. 2006. Contrôle de la tuberculose dans les prisons. Bruxelles: Fares.

Weinbaum C, Lyerla R, Margolis HS, Centers for Disease C, Prevention. 2003. Prevention and control of infections with hepatitis viruses in correctional settings. Centers for Disease Control and Prevention. Morbidity and Mortality Weekly Report 52(RR01): 1-36.

Westra M, de Haan HA, Arends MT, van Everdingen JJ, Klazinga NS, Centraal B. 2009. Richtlijn 'Medicamenteuze zorg aan gedetineerde verslaafden'. Nederlands Tijdschrift voor Geneeskunde 153:A726.

WHO Regional Office for Europe. 2013. Good governance for prison health in the 21st century. A policy brief on the organization of prison health. Copenhagen: WHO Regional Office for Europe.

Wiegand C, Weilandt C, MacDonald M, Popov I, Purvice B, et al. 2010. Schadensminderung im Justizvollzug: Ein Handbuch zur Fortbildung von Mitarbeiter(inne)n. Bonn: WIAD - Wissenschaftliches Institut der Ärzte Deutschlands .

Wilcox T. 2016. Managing Opiate Withdrawal: The WOWS Method. Correctional Care summer: 12-14

World Health Organization. 2007. Effectiveness of interventions to address HIV in prisons. Geneva: WHO.

World Health Organization. 2014. Prisons and Health. Geneva: WHO.

World Health Organization. 2017. Global Hepatitis Report 2017. Geneva: WHO.



■ REFERENCES

1. WHO. Declaration on Prison Health as part of Public Health. In: Moscow: WHO; 2003.
2. WHO Regional Office for Europe. Good governance for prison health in the 21st century. A policy brief on the organization of prison health 2013.
3. Freudenberg N. Jails, prisons, and the health of urban populations: a review of the impact of the correctional system on community health. *J Urban Health*. 2001;78(2):214-35.
4. Freudenberg N, Heller D. A Review of Opportunities to Improve the Health of People Involved in the Criminal Justice System in the United States. *Annu Rev Public Health*. 2016;37:313-33.
5. Anders P, Jolley R, Leaman J. Rebalancing Act. A resource for Directors of Public Health, Police and Crime Commissioners, the police service and other health and justice commissioners, service providers and users. *Revolving Doors Agency/ Public Health England*; 2017.
6. Leaman J, Emslie L, Richards A, O'Moore E. Rapid review of evidence of the impact on health outcomes of NHS commissioned health services for people in secure and detained settings to inform future health interventions and prioritisation in England. London: Public Health England; 2016.
7. Cosyns P, Koeck S, Verellen R. De justitiabele met een psychische stoornis in Vlaanderen. *Tijdschrift voor Psychiatrie*. 2008;50:63-8.
8. De Coninck G, Cosyns P, Harris F. Jaarverslag Centrale Toezichtsraad voor het gevangeniswezen. Brussel: Centrale Toezichtsraad voor het gevangeniswezen; 2011.
9. Cartuyvels Y, Champetier B, Wyvekens A. Social Defense in Belgium: Between Care and Security. An Empirical Approach. *Deviance et Societe*. 2010;34(4):615-45.
10. Cosyns P, Goethals K. Penitentiary mental health care in Belgium. In: *Ethical issues in prison psychiatry*. New York, NY: Springer Science + Business Media; US; 2013. p. 145-51. Available from:



- <http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&D=psyc10&AN=2013-32819-007>
11. Boers A, Vandevelde S, Soye V, De Smet S, To WT. Het zorgaanbod voor geïnterneerden in België. *Panopticon*. 2011;32:17-38.
 12. Hardonk S, Devlieger P, Detraux JJ, Vrielink J, Mortelmans D, Van Hove G, et al. Les personnes handicapées en Belgique et le (non-) respect des droits de l'homme et de meurs libertés fondamentales garantis par la Convention des Nations Unies relative aux droits des personnes handicapées. Centre interfédéral pour l'égalité des chances; 2014.
 13. Observatoire international des prisons. Notice 2013 sur l'état du système carcéral belge. 2013.
 14. Vandevelde S, Soye V, Vander Beken T, De Smet S, Boers A, Broekaert E. Mentally ill offenders in prison: the Belgian case. *Int J Law Psychiatry*. 2011;34(1):71-8.
 15. Batis N. Les détenus handicapés. Handicap + prison = double peine ? : ASPH; 2014.
 16. Kinna F, Cherbonnier A. Santé et prison. Dossier. *Bruxelles santé*. 1999;16:6-13.
 17. Comité européen pour la prévention de la torture et des peines ou traitements inhumains ou dégradants (CPT). Rapport au Gouvernement de la Belgique relatif à la visite effectuée en Belgique par le Comité européen pour la prévention de la torture et des peines ou traitements inhumains ou dégradants (CPT) du 24 septembre au 4 octobre 2013. Strasbourg; 2016.
 18. Observatoire international des prisons. Notice 2016. Pour le droit à la dignité des personnes détenues. 2017.
 19. Centrale Toezichtsraad voor het gevangeniswezen. Jaarverslag. Brussel; 2012.
 20. Commissie van Toezicht Gevangenis St-Gillis. Verslag 2014-2015. Brussel; 2016.
 21. Centrale Toezichtsraad voor het gevangeniswezen. Jaarverslag 2011-2014. Brussel; 2016.
 22. Salvi V. La santé et la promotion de la santé des personnes détenues en milieu carcéral. Rapport parlementaire à la demande du Ministre des Travaux publics, de la Santé, de l'Action sociale et du Patrimoine, Monsieur Maxime Prévot. Namur; 2016.
 23. Pourveur S. La prison nuit à la santé : un dossier, « La Santé en prison », de l'association des visiteurs francophones de prison de Belgique. *Trait d'union*. 2015(April).
 24. Federale Ombudsman. Jaarverslag 2015. Brussel; 2016.
 25. International Federation of Action by Christians for the Abolition of Torture. FIACAT and the ACAT of French-Speaking Belgium. Contribution to Belgium's Second Periodic Review. Paris; 2016.
 26. International Federation of Action by Christians for the Abolition of Torture. Rapport alternatif FIACAT – ACAT Belgique sur la mise en œuvre de la Convention contre la Torture et autres peines ou traitements cruels, inhumains ou dégradants. Paris; 2008.
 27. Reflectiegroep zorg en detentie. Memorandum: Naar een volwaardige gezondheidszorg voor gedetineerden en geïnterneerden in België. 2014.
 28. Commissie van Toezicht Gevangenis Antwerpen. Jaarverslag 2016. Antwerpen; 2016.
 29. Commissie van Toezicht Gevangenis Brugge-Ruiselede. Jaarverslag 2015. Brugge; 2016.
 30. Commissie van Toezicht Gevangenis Dendermonde. Jaarverslag 2016. Dendermonde; 2017.
 31. Commissie van Toezicht Gevangenis Gent. Jaarverslag 2014-2015. Gent; 2016.
 32. Commission de Surveillance en Prison Lantin. Rapport Annuel 2016. Lantin; 2017.



33. Comité européen pour la prévention de la torture et des peines ou traitements inhumains ou dégradants (CPT). Rapport au Gouvernement de la Belgique relatif à la visite effectuée en Belgique par le Comité européen pour la prévention de la torture et des peines ou traitements inhumains ou dégradants (CPT) du 28 septembre au 7 octobre 2009. Strasbourg: 2010.
34. Comité européen pour la prévention de la torture et des peines ou traitements inhumains ou dégradants (CPT). Rapport au Gouvernement de la Belgique relatif à la visite effectuée en Belgique par le Comité européen pour la prévention de la torture et des peines ou traitements inhumains ou dégradants (CPT) du 23 au 27 avril 2012. Strasbourg: European Commission; 2012.
35. Miclotte A. Eerstelijnszorg in de Vlaamse gevangenis: een explorerend beschrijvende studie door middel van interviews. Antwerpen: Universiteit Antwerpen; 2015.
36. Gourdin G, Vyncke V, Felgueroso-Bueno F, Eechaut V, Vander Beken T, Vander Laenen F, et al. Chapter 1. Organisation of health care in Belgian prisons. Brussel: KCE; 2017.
37. Roberfroid D, Mistiaen P, San Miguel L. Chapter 2. Health problems and health care utilization in Belgian prisons. Brussel: KCE; 2017.
38. Witkowski M, Hudson P, Batson S, Moore B, Mitchell S. Chapter 3. Systematic review of healthcare use and needs of prisoners. Brussel: KCE; 2017.
39. Dubois C, Linchet S, Mahieu C, Reynaert JF, Seron P. Chapter 4. Organization models of health care services in prisons in four countries. . Brussel: KCE; 2017.
40. Gourdin G, Vyncke V, Felgueroso-Bueno F, Trybou J, Malfait S, Semaille P, et al. Chapter 5. Financial aspects of health care in Belgian prisons. Brussel: KCE; 2017.
41. Eechaut V, Vander Laenen F, Vander Beken T. Chapter 6. Organisation of health care in Belgian prisons: legal framework. Brussel: KCE; 2017.
42. Vinck I, Mistiaen P. Chapter 7. Competences for the organisation of health care, health promotion, prevention and wellbeing issues in prisons. Brussel: KCE; 2017.
43. Schoukens P, De Weyer J. Chapter 8. Health care: the insurability of prisoners / Gedetineerden en de verzekering voor geneeskundige verzorging. Brussel: KCE; 2017.
44. Roodhooft D, Groffils L, Van Hoof S, Camaly O, Vanmaele H, Colin J, et al. Chapter 9. Health care in Belgian Prisons: Scenario building blocks. Brussel: KCE; 2017.
45. Mistiaen P, Dauvin M, Eyssen M, San Miguel L, Vinck I. Chapter 10. Future organization of health care in Belgian Prisons; final stakeholder consultation. Brussel: KCE; 2017.
46. Directoraat-generaal Penitentiare Inrichtingen. Jaarverslag 2012. Brussel: Federale Overheidsdienst Justitie; 2013.
47. Directoraat-generaal Penitentiare Inrichtingen. Jaarverslag 2013. Brussel: Federale Overheidsdienst Justitie; 2014.
48. Directoraat-generaal Penitentiare Inrichtingen. Jaarverslag 2014. Brussel: Federale Overheidsdienst Justitie; 2015.
49. Directoraat-generaal Penitentiare Inrichtingen. Jaarverslag 2015. Brussel: Federale Overheidsdienst Justitie; 2016.
50. Huber CA, Szucs TD, Rapold R, Reich O. Identifying patients with chronic conditions using pharmacy data in Switzerland: an updated mapping approach to the classification of medications. BMC Public Health. 2013;13:1030.
51. Halfon P, Egli Y, Decollogny A, Seker E. Disease identification based on ambulatory drugs dispensation and in-hospital ICD-10 diagnoses: a comparison. BMC Health Serv Res. 2013;13:453.
52. Comité voor de evaluatie van de medische praktijk inzake geneesmiddelen. Farmaceutische kengetallen. Farmaceutische verstrekkingen. Ambulante praktijk. Brussel: RIZIV – INAMI; 2015.



53. Sasse A, Deblonde J, Jamine D, Ost C, Van Beckhoven D. Epidemiologie van AIDS en HIV-infectie in België. Toestand op 31 december 2015. Brussel: Wetenschappelijk Instituut Volksgezondheid (WIV-ISP); 2016.
54. Aerts A, Hauer B, Wanlin M, Veen J. Tuberculosis and tuberculosis control in European prisons. *International Journal of Tuberculosis and Lung Disease*. 2006;10(11):1215-23.
55. Brosens D, De Donder L, Verté D. Hulp- en dienstverlening gevangenis Antwerpen: een onderzoek naar de behoeften van gedetineerden. Brussel: Vrij Universiteit Brussel; 2013.
56. De Wilde J, Soyez V, Vandevelde S, Broekaert E, Vander Beken T, Guillaume R, et al. Druggebruik en psychopathologie in gevangenen : een exploratieve studie tot methodiekontwikkeling. Gent: Academia Press; 2007.
57. Favril L, Vander Laenen F. Een geïntegreerd drugsbeleid in de gevangenis: zorgen voor morgen. *Fatik, Tijdschrift voor Strafbeleid en Gevangeniswezen* 2013(140):15-20.
58. Favril L, Vander Laenen F. Suïcidaliteit in detentie: over kwetsbare personen in een stressvolle context. *Fatik*. 2015(148):13-20.
59. Favril L, Vander Laenen F. Psychofarmaca en drugsgebruik in Vlaamse gevangenen. *Verslaving*. 2017;13:1-13.
60. Feron JM, Paulus D, Tonglet R, Lorant V, Pestiaux D. Substantial use of primary health care by prisoners: epidemiological description and possible explanations. *J Epidemiol Community Health*. 2005;59(8):651-5.
61. Feron JM, Tan LH, Pestiaux D, Lorant V. High and variable use of primary care in prison. A qualitative study to understand help-seeking behaviour. *Int J Prison Health*. 2008;4(3):146-55.
62. Pletincx P, Antoine J, Blanckaert P, De Ridder K, Vander Laenen F, Laudens F, et al. Rapport Annuel sur les drogues 2014. Tendances et évolutions. Bruxelles: WIV-ISP; 2014.
63. Thiry B. An assessment of personality disorders with the Five-Factor Model among Belgian inmates. *International Journal of Law and Psychiatry*. 2012;35(4):327-33.
64. Todts S. Middelengebruik en psychiatrische aandoeningen in de gevangenen. In: Daems T, Pletincx P, Robert L, Scheirs V, van de Wiel A, Verpoest K, editors. *Achter tralies in België*. Gent: Academia Press; 2009. p. 145-61.
65. Todts S. Mental Health Services in the Belgian prison system. In: Pompidou G, editor. *Mental Health and Addiction in Prisons*. Brussels: European Commission; 2013. p. 42.
66. Todts S, Glibert P, Van Malderen S, Van Huyck C, Saliez V, Hogge M. Usage de drogues dans les prisons belges : monitoring des risques sanitaires -2008. Bruxelles: SPF Justice / Modus Vivendi asbl; 2009.
67. Todts S, Van Meir J. Onderzoek psychiatrische medicatie 2010. FOD-Justitie, Dienst voor gezondheidszorg gevangenen; 2010.
68. Todts S, Van Meir J. Het gebruik van psychofarmaca in de Belgische gevangenen. *Panopticon*. 2011;32(3).
69. Verelst R. De psychiatrische hulpverlening in het belgische gevangeniswezen. *Periodiek, Tijdschrift van het Vlaams Geneeskundigenverbond*. 2015;70(1).
70. Vyncke V, Hanssens L, Steenberghs E, Willems S. Onderzoeksrapport 'Gezondheidsprofiel Gedetineerden'. Gent: U-Gent; 2015.
71. Van der Heyden J, Gisle L, Demarest S, Drieskens S, Hesse E, Tafforeau J. Gezondheidsenquête België, 2008. Rapport I - Gezondheidstoestand. Brussel: WIV/ISP; 2010.
72. Hardyns W, Vyncke V, Pauwels L, Willems S. Study protocol: SWING – social capital and well-being in neighborhoods in Ghent. *International Journal for Equity in Health*. 2015;14(1):36.



73. Hickey K, Kerber C, Astroth KS, Kim M, Schlenker E. Perceived health and gambling behavior of inmates: a review of the literature. *Nurs Forum*. 2014;49(4):247-58.
74. Godin-Blandeau E, Verdot C, Develay AE. État des connaissances sur la santé des personnes détenues en France et à l'étranger. Saint-Maurice: l'Institut de veille sanitaire; 2014.
75. Baussano I, Williams BG, Nunn P, Beggiato M, Fedeli U, Scano F. Tuberculosis incidence in prisons: a systematic review. *PLoS Med*. 2010;7(12):e1000381.
76. Gough E, Kempf MC, Graham L, Manzanero M, Hook EW, Bartolucci A, et al. HIV and hepatitis B and C incidence rates in US correctional populations and high risk groups: a systematic review and meta-analysis. *BMC Public Health*. 2010;10(777).
77. Arain A, Robaeys G, Stover H. Hepatitis C in European prisons: a call for an evidence-informed response. *BMC Infect Dis*. 2014;14 Suppl 6:S17.
78. Walsh T, Tickle M, Milsom K, Buchanan K, Zoitopoulos L. An investigation of the nature of research into dental health in prisons: a systematic review. *Br Dent J*. 2008;204(12):683-9; discussion 67.
79. Fazel S, Bains P, Doll H. Substance abuse and dependence in prisoners: a systematic review. *ADDICTION*. 2006;101(2):181-91 11p.
80. Kouyoumdjian F, Schuler A, Matheson FI, Hwang SW. Health status of prisoners in Canada Narrative review. *Can. Fam. Phys*. 2016;62(3):215-22.
81. Fazel S, Seewald K. Severe mental illness in 33,588 prisoners worldwide: systematic review and meta-regression analysis. *Br J Psychiatry*. 2012;200(5):364-73.
82. Fazel S, Wolf A, Geddes JR. Suicide in prisoners with bipolar disorder and other psychiatric disorders: a systematic review. *Bipolar Disord*. 2013;15(5):491-5.
83. Fovet T, Geoffroy PA, Vaiva G, Adins C, Thomas P, Amad A. Individuals with bipolar disorder and their relationship with the criminal justice system: a critical review. *Psychiatr Serv*. 2015;66(4):348-53.
84. Hellenbach M, Karatzias T, Brown M. Intellectual disabilities among prisoners: Prevalence and mental and physical health comorbidities. *Journal of Applied Research in Intellectual Disabilities* Jan. 2016(Pagination):No Pagination Specified.
85. Knecht C, de Alvaro R, Martinez-Raga J, Balanza-Martinez V. Attention-deficit hyperactivity disorder (ADHD), substance use disorders, and criminality: a difficult problem with complex solutions. *Int J Adolesc Med Health*. 2015;27(2):163-75.
86. Mukherjee S, Pierre-Victor D, Bahelah R, Madhivanan P. Mental health issues among pregnant women in correctional facilities: a systematic review. *Women Health*. 2014;54(8):816-42.
87. Prins SJ. Prevalence of mental illnesses in US State prisons: a systematic review. *Psychiatr Serv*. 2014;65(7):862-72.
88. Sirdifield C, Gojkovic D, Brooker C, Ferriter M. A systematic review of research on the epidemiology of mental health disorders in prison populations: A summary of findings. *J. Forensic Psychiatry Psychol*. 2009;20(SUPPL.1):S78-S101.
89. Young S, Moss D, Sedgwick O, Fridman M, Hodgkins P. A meta-analysis of the prevalence of attention deficit hyperactivity disorder in incarcerated populations. *Psychol Med*. 2015;45(2):247-58.
90. Blodgett JC, Avoundjian T, Finlay AK, Rosenthal J, Asch SM, Maisel NC, et al. Prevalence of mental health disorders among justice-involved veterans. *Epidemiologic Reviews*. 2015;37:163-76.
91. Sirdifield C, Gojkovic D, Brooker C, Ferriter M. A systematic review of research on the epidemiology of mental health disorders in prison populations: a summary of findings. *The Journal of Forensic Psychiatry & Psychology*. 2009;20(sup1):S78-S101.



92. Lenzenweger MF, Lane MC, Loranger AW, Kessler RC. DSM-IV personality disorders in the National Comorbidity Survey Replication. *Biol Psychiatry*. 2007;62(6):553-64.
93. ISP-WIV;. Belgium Health Interview Survey 2013. Brussels: ISP-WIV; ; 2013.
94. Belgische Kamer van Volksvertegenwoordigers. Verantwoording van de algemene uitgavenbegroting voor het begrotingsjaar 2015. FOD Justitie. 2014
95. van Mol F. De gezondheidszorg in de Belgische gevangenissen. Melle; 2013.
96. Enggist S, Møller L, Galea G, Udesen C. Prisons and health. Copenhagen: WHO Regional Office for Europe; 2014.
97. Brutus L, Mackie P, Millard A, Fraser A, Conacher A, Hardie S, et al. Better health, better lives for prisoners: A framework for improving the health of Scotland's prisoners. Volume 1: the framework. Scottish Prison Service; 2012.
98. Brutus L, Mackie P, Millard A, Fraser A, Conacher A, Hardie S, et al. Better health, better lives for prisoners: A framework for improving the health of Scotland's prisoners. Volume 2: supporting material for the framework Scottish Prison Service; 2012.
99. Gojkovic D. Less theory and more action? The state of international prison mental health care. *Int J Nurs Stud*. 2010;47(12):1459-63.
100. International Centre for Prison Studies. Prison Health and Public Health: The integration of Prison Health Services. London: King's College; 2004.
101. The Scottish Parliament - Health and Sport Committee. Healthcare in Prisons, 5th report. The Scottish Parliament; 2017.
102. RCN Scotland. Five years on: RCN Scotland review of the transfer of prison health care from the SPS to NHS Scotland. RCN Scotland; 2016.
103. Onkelinx L. Basiswet betreffende het gevangeniswezen en de rechtspositie van de gedetineerden. *Belgisch Staatsblad*. 2005;175(32).
104. Roberfroid D, Dauvrin M, Keygnaert I, Desomer A, Kerstens B, Camberlin C, et al. What health care for undocumented migrants in Belgium? Health Services Research (HSR). Brussel: Belgian Health Care Knowledge Centre (KCE); 2015 12/2015. (D/2015/10.273/111) Available from: http://kce.fgov.be/sites/default/files/page_documents/KCE_257C_Health_care_migrants_Synthesis.pdf
105. Geens K. Het justitieplan. Een efficiëntere justitie voor meer rechtvaardigheid. Brussel: Ministerie van Justitie; 2015.
106. National Institute for Health and Care Excellence. Physical health of people in prison: assessment, diagnosis and management of physical health problems. National Institute for Health and Care Excellence; 2016.
107. National Institute for Health and Care Excellence. Mental health of adults in contact with the criminal justice system. Identification and management of mental health problems and integration of care for adults in contact with the criminal justice system. NICE Guideline 66. NICE; 2017.
108. Demeersman T. Thuisloosheid na detentie. Leuven: Steunpunt Algemeen Welzijnswerk; 2008.
109. Van Haegendoren M, Lenaers S, Valgaeren E. De Gemeenschap achter de tralies. Onderzoek naar de behoeften van gedetineerden aan maatschappelijk hulp- en dienstverlening. Sociaal Economisch Instituut, Limburgs Universitair Centrum; 2001.
110. Jamouille P. La prison ne s'arrête pas à ses murs. *Santé Conjugée*. 2002(22):74-7.
111. Zola IK. Culture and Symptoms--An Analysis of Patient's Presenting Complaints. *American Sociological Review*. 1966;31(5):615-30.



112. Ravindran N, Myers B. Cultural Influences on Perceptions of Health, Illness, and Disability: A Review and Focus on Autism. *Journal of Child and Family Studies*. 2012;21(2):311-9.
113. D'Houtaud A, Field MG. The image of health: variations in perception by social class in a French population. *Sociology of Health & Illness*. 1984;6(1):30-60.
114. Pierret J. Constructing discourses about health and their social determinants. In: Radley A, editor. *Worlds of Illness. Biographical and cultural perspectives on health and disease*. London & New York: Routledge; 1993. p. 9-26.
115. Blair A. Social class and the contextualization of illness experience. In: Radley A, editor. *Worlds of Illness. Biographical and cultural perspectives on health and disease*. London & New York: Routledge; 1993. p. 27-48.
116. Blaxter M. *Health and lifestyles*. London: Routledge; 1990.
117. Nuyens Y. *De eerste lijn is krom*. Deventer: Van Loghum Slaterus; 1980.
118. Schepers R. *Ziekte en Zorg. Inleiding in de medische sociologie*. Leuven & Voorburg: Acco; 2007.
119. Nettleton S. *The sociology of health & illness*. Cambridge: Polity Press; 1998.
120. De Maere W, Hariga F, Bartholeyns F, Vanderverken M. *Gezondheid en druggebruik in het penitentiair milieu*. Brussel: Federale Diensten voor Wetenschappelijke, Technische en Culturele Aangelegenheden; 2000.
121. Ministère de la Justice, Ministère des Affaires sociales et de la Santé. *Guide méthodologique. Prise en charge sanitaire des personnes placées sous main de justice*. Paris; 2012.
122. Bagnall AM, South J, Hulme C, Woodall J, Vinnall-Collier K, Raine G, et al. A systematic review of the effectiveness and cost-effectiveness of peer education and peer support in prisons. *BMC Public Health*. 2015;15:290.
123. Wright N, Bleakley A, Butt C, Chadwick O, Mahmood K, Patel K, et al. Peer health promotion in prisons: a systematic review. *Int J Prison Health*. 2011;7(4):37-51.
124. Stewart W, Edmond N. Prisoner peer caregiving: a literature review. *Nurs Stand*. 2017;31(32):44-51.
125. South J, Bagnall A, Hulme C, Woodall J, Longo R, Dixey R, et al. A systematic review of the effectiveness and cost-effectiveness of peer-based interventions to maintain and improve offender health in prison settings. *Health Services and Delivery Research*. 2014;2(35).
126. Barker E, Kolves K, De Leo D. Management of suicidal and self-harming behaviors in prisons: systematic literature review of evidence-based activities. *Arch Suicide Res*. 2014;18(3):227-40.
127. Hassan L, Weston J, Senior J, Shaw J. Prisoners holding their own medications during imprisonment in England and Wales: a survey and qualitative exploration of staff and prisoners' views. *Crim Behav Ment Health*. 2012;22(1):29-40.
128. Roberfroid D, Dauvrin M, Keygnaert I, Desomer A, Kerstens B, Camberlin C, et al. What health care for undocumented migrants in Belgium? . Brussels: KCE; 2015. 257Cs
129. Vander Laenen F, Vanderplasschen W, Smet V, De Maeyer J, Buckinx M, Van Audenhove S, et al. Analysis and Optimization of Substitution Treatment in Belgium (SUBANOP). 2013. https://www.belspo.be/belspo/organisation/Publ/pub_ostc/Drug/rD_R58_en.pdf Last accessed 1 July 2016.
130. Beyens K, Boone M. 'Zeg maar Henk tegen de chef'. Ervaringen met het Belgische detentieregime in de PI Tilburg. Den Haag: Boom Lemma uitgevers; 2013.
131. Igoumenou A, Kallis C, Coid J. Treatment of psychosis in prisons and violent recidivism. *BJPsych Open*. 2015;1(2):149-57.
132. Vander Laenen F, Vanderplasschen W, Smet V, De Maeyer J, Buckinx M, Van Audenhove S, et al. Analysis and Optimization of Substitution Treatment in Belgium (SUBANOP). Gent: Academia Press; 2013.



133. European Monitoring Centre for Drugs and Drug Addiction. Prisons and drugs in Europe: the problem and responses. . Lisbon: European Monitoring Centre for Drugs and Drug Addiction,; 2012.
134. Sander G, Scandurra A, Kamenska A, MacNamara C, Kalpaki C, Bessa CF, et al. Overview of harm reduction in prisons in seven European countries. *Harm Reduct J*. 2016;13(1):28.
135. Decorte T. Problems, needs and service provision related to stimulant use in European prisons. *International Journal of Prisoner Health*. 2007;3(1):29-42.
136. Michel L, Lions C, Van Malderen S, Schiltz J, Vanderplasschen W, Holm K, et al. Insufficient access to harm reduction measures in prisons in 5 countries (PRIDE Europe): a shared European public health concern. *BMC Public Health*. 2015;15:1093.
137. Caraël E. Stratégies concertées de prévention et de réduction des risques en matière de drogues en Fédération Wallonie-Bruxelles. *Eurotox*; 2012.
138. Hedrich D, Alves P, Farrell M, Stover H, Moller L, Mayet S. The effectiveness of opioid maintenance treatment in prison settings: a systematic review. *Addiction*. 2012;107(3):501-17.
139. Kouyoumdjian FG, McIsaac KE, Liauw J, Green S, Karachiwalla F, Siu W, et al. A systematic review of randomized controlled trials of interventions to improve the health of persons during imprisonment and in the year after release. *Am J Public Health*. 2015;105(4):e13-33.
140. Larney S. Does opioid substitution treatment in prisons reduce injecting-related HIV risk behaviours? A systematic review. *Addiction*. 2010;105(2):216-23.
141. Mitchell O, Wilson DB, MacKenzie DL. Does incarceration-based drug treatment reduce recidivism? A meta-analytic synthesis of the research. *Journal of Experimental Criminology*. 2007;3(4):353-75.
142. Perry A, Coulton S, Glanville J, Godfrey C, Lunn J, McDougall C, et al. Interventions for drug-using offenders in the courts, secure establishments and the community. *Cochrane Database Syst Rev*. 2006(3):CD005193.
143. Perry AE, Darwin Z, Godfrey C, McDougall C, Lunn J, Glanville J, et al. The effectiveness of interventions for drug-using offenders in the courts, secure establishments and the community: a systematic review. *Subst Use Misuse*. 2009;44(3):374-400.
144. Perry AE, Neilson M, Martyn-St James M, Glanville JM, Woodhouse R, Hewitt C. Interventions for female drug-using offenders. *Cochrane Database of Systematic Reviews*. 2015;6.
145. Perry AE, Neilson M, Martyn-St JM, Glanville JM, Woodhouse R, Godfrey C, et al. Interventions for drug-using offenders with co-occurring mental illness. *Cochrane Database of Systematic Reviews*. 2015(6).
146. Westra M, de Haan HA, Arends MT, van Everdingen JJ, Klazinga NS, Centraal B. Richtlijn 'Medicamenteuze zorg aan gedetineerde verslaafden'. *Nederlands Tijdschrift voor Geneeskunde*. 2009;153.
147. Wanlin M. Contrôle de la tuberculose dans les prisons. Bruxelles: Fares; 2006.
148. FARES; . Informations supplémentaires sur la tuberculose [Web page]. [cited 07 may]. Available from: <http://www.fares.be/quiztbc/informations.php>
149. Sasse A, Deblonde J, Jamine D, Ost C, Van Beckhoven D. Epidémiologie du SIDA et de l'infection à VIH en Belgique. Situation au 31 décembre 2015. Bruxelles: ISP-WIV; 2016.
150. Dewitte M. Présentation du Service Soins de Santé Prisons aux agents pénitentiaires en formation de base. 2008. Mémoire présenté en vue de l'obtention du titre d' « inspecteur médical pour le Service Soins de Santé Prisons ». Bruxelles: Service Public Fédéral Justice. Direction Générale Établissements Pénitentiaires; 2008.



151. Dolan K, Wirtz AL, Moazen B, Ndeffo-Mbah M, Galvani A, Kinner SA, et al. Global burden of HIV, viral hepatitis, and tuberculosis in prisoners and detainees. *Lancet*. 2016;388(10049):1089-102.
152. Condon L, Gill H, Harris F. A review of prison health and its implications for primary care nursing in England and Wales: the research evidence. *J Clin Nurs*. 2007;16(7):1201-9.
153. Rumble C, Pevalin DJ, O'Moore E. Routine testing for blood-borne viruses in prisons: a systematic review. *Eur J Public Health*. 2015;25(6):1078-88.
154. Zampino R, Coppola N, Sagnelli C, Di Caprio G, Sagnelli E. Hepatitis C virus infection and prisoners: Epidemiology, outcome and treatment. *World J Hepatol*. 2015;7(21):2323-30.
155. Chari KA, Simon AE, DeFrances CJ, Maruschak L. National Survey of Prison Health Care: Selected Findings National Health Statistics Reports. 2016;96.
156. Deslich SA, Thistlethwaite T, Coustasse A. Telepsychiatry in correctional facilities: using technology to improve access and decrease costs of mental health care in underserved populations. *Perm J*. 2013;17(3):80-6.
157. Glaser M, Winchell T, Plant P, Wilbright W, Kaiser M, Butler MK, et al. Provider satisfaction and patient outcomes associated with a statewide prison telemedicine program in Louisiana. *Telemed J E Health*. 2010;16(4):472-9.
158. Gualano MR, Bert F, Andriolo V, Grosso M, Minniti D, Siliquini R. Use of telemedicine in the European penitentiaries: current scenario and best practices. *Eur J Public Health*. 2017;27(1):30-5.
159. Hofman J, Pollitt A, Broeks M, Stewart K, Van Stolk C. Review of computerised cognitive behavioural therapies. Products and outcomes for people with mental health needs. Santa Monica: RAND corporation; 2016.
160. Kassir K, Roe C, Desimone M. Use of Telemedicine for Management of Diabetes in Correctional Facilities. *Telemed J E Health*. 2017;23(1):55-9.
161. Khalifa N, Saleem Y, Stankard P. The use of telepsychiatry within forensic practice: A literature review on the use of videolink. *The Journal of Forensic Psychiatry & Psychology*. 2008;19(1):2-13.
162. Lavrentyev V, Seay A, Rafiq A, Justis D, Merrell RC. A surgical telemedicine clinic in a correctional setting. *Telemed J E Health*. 2008;14(4):385-8.
163. Nolan A, Power J. Le recours à la télémedecine pour le traitement des délinquants: une pratique prometteuse. *État de la recherche*. 2013;13(1).
164. Patel MC, Young JD. Delivering HIV subspecialty care in prisons utilizing telemedicine. *Dis Mon*. 2014;60(5):196-200.
165. Rogers MA, Lemmen K, Kramer R, Mann J, Chopra V. Internet-Delivered Health Interventions That Work: Systematic Review of Meta-Analyses and Evaluation of Website Availability. *J Med Internet Res*. 2017;19(3):e90.
166. Swift C, Cain SM, Needham M. A Primary Care Telehealth Experience in a US Army Correctional Facility in Germany. *US Army Med Dep J*. 2016:76-80.
167. Tucker W, Olfson M, Simring S, Goodman W, Bienenfeld S. A pilot survey of inmate preferences for on-site, visiting consultant, and telemedicine psychiatric services. *CNS Spectr*. 2006;11(10):783-7.
168. Young JD, Badowski ME. Telehealth: Increasing Access to High Quality Care by Expanding the Role of Technology in Correctional Medicine. *J Clin Med*. 2017;6(2).
169. Fatome T, Verenerey M, Lalande F, Valdes Boulouque M, Froment B. L'organisation des soins aux détenus : Rapport d'évaluation Paris: IGAS/IGSJ; 2001.



COLOPHON

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