



Research report February 2020

Locked out? Prisoners' use of hospital care

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nuffieldtrust

About this report

There were, on average, 83,000 people in prison in England and Wales at any one time last year, yet relatively little is known about prisoners' physical health care needs; how and why they access hospital services; and whether their physical health needs are being adequately met. Drawing on over 110,000 patient hospital records for prisoners at 112 prisons in 2017–18, this study provides the most in-depth look to date at how prisoners' health needs are being met in hospital.

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List of abbreviations

A&E	Accident & Emergency
ADHS	Adult Dental Health Survey
AUDIT	Alcohol Use Disorders Identification Test
CINAHL	Cumulative Index to Nursing and Allied Health Literature
DAST	Drug Abuse Screening Test
DKA	Diabetes with ketoacidosis
HMIC	Health Management Information Consortium
HMPPS	Her Majesty's Prison and Probation Service
ICD-10	<i>International Statistical Classification of Diseases and Related Health Problems</i>
NDTMS	National Drug Treatment Monitoring System
NHS	National Health Service
OPCS	Office of Population Censuses and Surveys
STI	Sexually transmitted infection
UNODC	United Nations Office on Drugs and Crime

Key findings

There were, on average, 83,000 people in prison in England and Wales at any one time last year, yet relatively little is known about prisoners' physical health care needs; how and why they access hospital services; and whether their physical health needs are being adequately met. Drawing on over 110,000 patient hospital records for prisoners at 112 prisons in 2017–18, this study provides the most in-depth look to date at how prisoners' health needs are being met in hospital.

Prisoners use hospital services far less and miss more hospital appointments than the general population

- Prisoners had 24% fewer inpatient admissions and outpatient attendances than the equivalent age and sex demographic in the wider population, and 45% fewer attendances at accident and emergency departments.
- 40% of outpatient appointments for prisoners were not attended (32,987 appointments) – double the proportion of non-attended appointments in the general population. Our research found that the value of non-attended appointments by prisoners in 2017/18 where no advanced warning was given equated to around £2 million for the NHS.

Prisoners have particular health needs related to violence, drug use and self-harm

- Injury and poisoning were the most common reason for prisoners being admitted to hospital, accounting for 18% of cases (2,169 admissions) compared to 6% of all admissions in the general population (aged 15+).
- Psychoactive substance use was recorded in more than 25% of all inpatient admissions by prisoners in 2017/18.

Hospital data reveals potential lapses of care within prisons for certain groups of prisoners

- Six prisoners gave birth either in prison or on their way to hospital, representing more than one in 10 of all women who gave birth during their prison stay.

- There were 51 hospital admissions by 39 prisoners with diabetes as a result of diabetic ketoacidosis (DKA), an avoidable and potentially life-threatening complication of diabetes caused by lack of insulin.

This analysis points to two key areas where more focused policy attention could result in improvements to prisoner health: improving prisoners' access to hospital care and making better use of hospital data. We therefore make the following recommendations for the five public authorities involved in the National Partnership Agreement for Prison Healthcare – the Ministry of Justice, Her Majesty's Prison and Probation Service, Public Health England, the Department of Health and Social Care, and NHS England – as well as prisons, health care providers, commissioners, and the research community.

Improving prisoners' access to hospital care

- 1 Provide greater transparency over prison escort numbers and review the supply of prison escorts
- 2 Increase access to outpatient services via telemedicine consultations

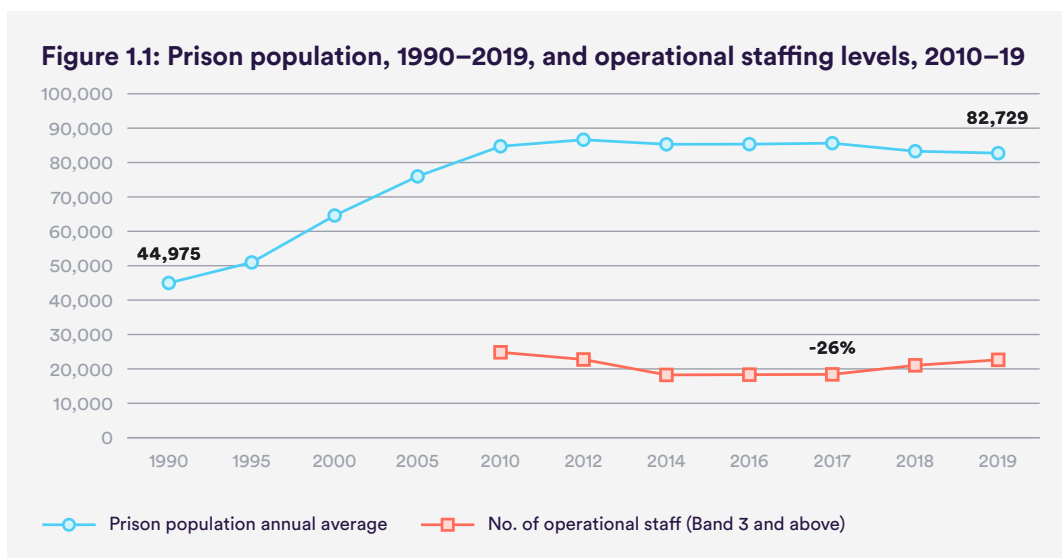
Making better use of hospital data

- 1 Collect, collate and publish regular data on prisoners' health care use and how it compares to the general population
- 2 Identify and monitor avoidable health outcomes for prisoners
- 3 Collect and publish data on pregnant women in prisons

1 Introduction

In December 2019, the prison population of England and Wales was just under 83,000 (gov.uk, 2019a). The average number of people in prison has remained fairly steady over the past 10 years (House of Commons Health and Social Care Committee, 2018), but more than 20% of prisoners are currently held in conditions classified as ‘crowded’ (Ministry of Justice, 2019a), commonly meaning two prisoners living in a cell built for one.

The challenges caused by the sheer number of people in prison need to be understood in the context of the historical growth in the number of people in prison, which has increased to current levels from an average of 44,975 in 1990 (House of Commons Library, 2017), as shown in Figure 1.1. Figure 1.1 also illustrates the 26% reduction in staffing levels between 2010 and 2017.



Note: Horizontal axis intervals vary in order to present most recent key data clearly.

Source: Ministry of Justice (2018e, 2019c) and prison population monthly bulletins for the 2019 average (Ministry of Justice, 2019d).

Another challenge is that the prison estate was not built to meet the needs of an increasingly diverse population, which includes a growing proportion of older prisoners. Prisoners aged 50+ currently represent around 15% of the total prison population, with numbers predicted to rise (House of Commons Library, 2019a; Ministry of Justice, 2018a). Around a third of prisoners live in prisons built in the Victorian era (House of Commons Library, 2019b). There are serious logistical challenges for people living in these Victorian-era institutions, particularly for those who are disabled or with limited mobility, since most buildings are not accessible.

The reduction in size of the prison workforce is yet another issue affecting the day-to-day running of the prison estate. Front-line prison staff numbers were reduced by 26% between 2010 and 2017 (Prison Reform Trust, 2018). Although staff numbers are now climbing (Ministry of Justice, 2019b), the impact of reduced staff availability, and the loss of experienced staff in particular, remains. Prison staff are integral to prisoners' access to health care in that they physically escort prisoners to and from appointments. At least two officers are required to escort a prisoner to hospital (NOMS, 2015).

Being in prison means people have lost their freedom, but the punishment of being in prison does not mean people lose their right to health care. Prisoners have the same rights to health care as those not in custody in that health services should be accessible to them and of a comparable quality (gov.uk, 2018a; Penal Reform International, 2016; UNODC and others, 2013).

The challenges of providing health care within a prison setting mean that the notion of 'equivalence of care' between prison and the community has attracted significant discussion in relation to the practical delivery of care (Ismail and de Viggiani, 2018). In 2018, the Royal College of General Practitioners released a position statement on equivalence of care in secure environments to provide guidance in this area. The statement addresses the difficulties of providing health care within a prison environment, noting that there is variation in health care provided in the community and that health care in prison needs to be 'at least' comparable. The Royal College of Midwives (2019) also released a position statement highlighting the importance of equivalent care for perinatal women in the criminal justice system.

Commissioning health services in prisons

Commissioning, delivery and oversight of health services in prisons is complex and involves a number of national bodies, but is underpinned by the principle of equivalence. Commissioning of health care services in prisons and other secure facilities in England is the responsibility of NHS England Health and Justice (NHS England, 2019b). The NHS took over commissioning of health care in the secure estate from the Prison Medical Service in 2006.

Since 2013, the majority of health care services provided to prisoners have been commissioned by the Health and Justice arm of NHS England, which operates via 10 health and justice teams based across four regions. The Ministry of Justice directly contracts health services in five private sector prisons (HM Government, 2018). However, emergency care and ambulance services are commissioned by the CCGs in which the prison is located and public health services are commissioned by Public Health England.

A National Partnership Agreement for Prison Healthcare in England 2018–21 was published in 2018 and sought to clarify the partnership arrangement between five national bodies: the Ministry of Justice, Her Majesty's Prison and Probation Service, Public Health England, the Department of Health and Social Care, and NHS England (see box on next page for more information). This updated arrangement replaced the previous partnership, which did not include the Ministry of Justice or the Department of Health and Social Care. Oversight of the National Partnership Agreement is provided by the National Prison Healthcare Board. Local Delivery Boards provide governance at a local level by bringing together prison governors/directors, providers of health care and local authority leads for social care, using Local Delivery Agreements.

Health care within prisons is delivered by both NHS providers and independent operators, such as CareUK. Public Health England (2016b) provides an overview of key developments in how prison health commissioning arrangements have changed over time.

Key policy document

National Partnership Agreement for Prison Healthcare in England: 2018–2021 (HM Government, 2018)

This document outlines the three key objectives of the partnership, which are:

- improving the health of people in prison
- tackling health behaviours that are linked to offending to reduce reoffending
- supporting continuity of care pre- and post-prison.

The three key objectives form 10 priorities and the document outlines the individual responsibilities of the five partners in meeting these priorities and wider objectives.

What health care services are available in prison?

Health care teams in prison provide some aspects of health care on site. These teams can include a range of professionals. There is variation between prisons in terms of the services that are available and how they are delivered. Services are predominantly nurse-led, but GPs also run clinic sessions, as do dentists, psychiatrists and specialist consultants (Hard and Fryar, 2019).

Within 24 hours of arriving in prison, prisoners should receive an initial health care assessment to identify immediate needs such as ongoing medication requirements for physical or mental health problems or treatment linked to drug or alcohol withdrawal (HM Prison Service, 2006). There should then be a follow-up health care assessment within a week to address any issues raised at reception screening that require ongoing input, as well as meeting more general health care needs such as health promotion advice (NICE, 2016).

To address day-to-day issues that primary care services would generally attend to in the community, prisoners can make an appointment to see a GP at a clinic session (this commonly involves initial triage by a nurse). Prisoners can also make an appointment to see a dentist, although in some places there are rules about the type of dental treatment prisoners can access if they are on a short sentence or if they are a remand (unconvicted) prisoner (British Dental Association and National Association of Prison Dentistry, 2018).

For patients with long-term health conditions, varying commissioning arrangements mean that the way care is delivered for the same condition can differ between prisons. Care can sometimes be provided on site in the form of a specialist nurse-led service (such as diabetes support or kidney care), or a visiting consultant from a hospital facility. Telemedicine services can also be used to provide care remotely and avoid the need for an external hospital appointment.

There are minimal opportunities in prison for self-care to manage health care needs. Although prisons may have a pharmacist to dispense prescribed medication, prisoners do not have the option of attending a pharmacist for advice as they might in the community.

The importance of health care in prison

The issue of whether people's health care needs can be met in prison in the same way that they would in the community potentially has wider implications for the justice system making sentencing decisions. For example, the recent case of a new-born baby who died at HMP Bronzefield, which was reported in *The Guardian* (Devlin and Taylor, 2019), raises serious questions as to whether prison is an appropriate environment for someone who is pregnant.

Aside from the statutory and humanitarian motivation to properly meet the health care needs of people in prison, there are potential wider benefits to society if prisoners leave prison less likely to reoffend when those needs are addressed. When followed up over a 12-month period, people who were released from custody or received a non-custodial conviction/caution between October and December 2016 had a reoffending rate ranging from 28.6% to 64.5% depending on whether they were classified as adults or young people and their sentence length (Ministry of Justice, 2018c). MacAskill and others (2011) reported that 40% of new arrivals at a prison in Scotland who undertook screening for alcohol problems using the Alcohol Use Disorders Identification Test (AUDIT) said that alcohol was a factor in their initial offence.

Although data is not collected to explore the relationship between specific health interventions and reoffending, if targeting health issues reduced reoffending, this would in turn mean fewer future victims of crime and savings on prison spending. Addressing health-related behaviours seen to be linked to offending, such as alcohol and drug use, is one of the objectives of the *National Partnership Agreement for Prison Healthcare in England: 2018–2021* (HM Government, 2018).

There are wide-ranging social-contextual factors that can affect prisoners' general state of health, such as experience of abuse, having been taken into care in childhood, unemployment and homelessness (see the Prison Reform Trust's *Bromley Briefings*: Prison Reform Trust, 2018). Against a backdrop of these experiences, a central aspect of prisoner health literature addresses the high-volume health issues that place pressure on health care services (as well as the operation of prisons more broadly) when prisoners arrive at prison but also throughout their stay – in particular, issues related to alcohol and drug use and abuse.

Prisoners' physical health care needs receive less research attention. Evidence is primarily drawn from international studies (see Fazel and Baillargeon, 2011) or studies conducted quite a number of years ago, before the NHS took over the commissioning of health care, such as the 1994 'Survey of the Physical Health of Prisoners' carried out by the-then Office of Population Censuses and Surveys (OPCS) (as cited in Condon, 2007). There are also gaps in knowledge around the numbers of people with long-term health conditions in the prisoner population and the impact of being in prison on day-to-day condition management.

The secure estate

The secure estate in England and Wales is managed collectively by Her Majesty's Prison and Probation Service (HMPPS), and includes prisons, young offender institutions, secure training centres and immigration removal centres. There are 117 prisons and young offender institutions across England and Wales.¹

Prisons for male, female and young offenders (children) are categorised in different ways.

Categorisation is based primarily on risk:

- risk of an attempted escape
- possible harm to the public if an escape was successful
- security issues within the prison itself.

The adult female estate is much smaller than the male estate, with just 12 prisons in total, all of which are located in England.

A House of Commons Library (2019b) briefing paper provides a good overview of the prison estate, including the different types of prisons, and the plans under way to change the way the prison estate is structured – the Prison Estate Transformation Programme.

This work focused specifically on prisons and young offender institutions within the secure estate in England, and includes 112 locations.

1 HMP Peterborough holds both men and women separately.

2 Methods

Overview

This research provides a much-needed focus on the physical health care needs of prisoners – an area where up-to-date information, drawing on evidence specific to the prison system in England and Wales, is minimal.

This work focuses purely on health care service use by prisoners in England, due to the division of health care organisation between England and Wales. However, the impact of the wider prison system on health care will involve challenges likely to be applicable in Wales too.

Literature review

The first stage of the research was a literature review of evidence on:

- the physical health care needs of prisoners
- how quality of care is assessed
- the impact of the historical change in health care commissioning and delivery in prisons.

Our review drew on evidence from 2006 onwards when the NHS took over the commissioning of health care in the secure estate from the Prison Medical Service in the majority of instances. We chose physical health as the focus of the review on the basis that it receives much less attention than mental health in existing work looking at prisoners' health care needs. The full literature review can be found in **Appendix A**, which is provided in a separate appendix document.

Data analysis

We then used routine data (Hospital Episode Statistics) to describe prisoners' use of hospital services and what this tells us about key areas of health

care need. This is the first time routine hospital data at a national level has been used to describe how often prisoners use hospital services and for what reasons.

Marshall and others (2001) used data reported by the Prison Service Directorate of Health Care in 1997/98 to calculate hospital admission rates per prisoner year, but they did not validate the figures using hospital data or attempt to determine the figures directly from hospital data. Their work was also carried out before the NHS took over the control of health care commissioning in the prison estate.

We adopted new approaches to identify prisoners' anonymised hospital records within routine data, which have the potential to be used more widely to explore prisoners' physical health care needs.

Expert panel

Throughout the course of the research, we convened an expert panel to sense-check the findings and provide targeted expertise in panel members' specific knowledge areas. The panel included representatives from the Association of Members of Independent Monitoring Boards (AMIMB), Birth Companions, the British Medical Association, a Head of Prison Healthcare, the Howard League, Her Majesty's Prison and Probation Service (HMPPS), an Inside Recovery & Service User Involvement Manager, NHS England, Public Health England, researchers from the Universities of Warwick and Leeds Beckett, the Royal College of General Practitioners Secure Environments Group and the Royal College of Psychiatry.

We did not conduct formal interviews or focus groups with prisoners as part of this work due to the challenges in reaching a representative and diverse sample necessary for data saturation. However, the research was informed by members of the expert panel with direct expertise in working with prisoners, including some in a formal prisoner involvement role. In addition, the expert panel assisted the lead researcher in setting up informal prison visits to provide context and background for the analysis.

Identifying use of hospital services by prisoners

We used Hospital Episode Statistics (HES) data from 2017/18 to identify prisoners' use of hospital services. HES data provides a record of admitted patient care, outpatient appointments and Accident & Emergency (A&E) activity. Because the approach we were using was new, it seemed sensible to test it on only one year of data, given the data access costs involved, to provide evidence that can be used to extend the approach across multiple data years in future if successful.

The first stage of the analysis involved exploring two different ways of identifying prisoners' anonymised hospital records: using specific data fields in HES; and using postcode as a proxy for prison location and therefore associated hospital activity linked to prisoners. The results for this aspect of the analysis can be found in **Appendix B**, which is provided in a separate Appendix document.

We ultimately chose prison postcode as the best means of identifying patients from prison estate establishments within HES data. Using postcode as a proxy to identify hospital activity linked to a specific group is a methodology that the Nuffield Trust has successfully applied in the context of care home residents in past research (Smith and others, 2015). For the present research, this approach involved providing NHS Digital with a list of postcodes of prisons and young offender institutions in England, with an associated study identifier for each establishment.

NHS Digital in turn provided inpatient, outpatient and A&E record identifiers (EPIKEY, ATTENDKEY and AEKEY²) along with the matched study IDs, which enabled individuals' anonymised hospital records to be identified.

2 EPIKEY, ATTENDKEY and AEKEY are record identifiers created by the HES system.

Data analysis

We looked at the use of hospital services – admitted patient care, outpatient appointments and A&E attendances – by prisoners in 2017/18.

This included calculating the number of admissions, attendances and appointments, activity by month, primary and secondary reasons for admission as well as missed outpatient appointments.

We replicated some aspects of the analysis to look just at prisoners aged 50+. It is recognised that the number of older prisoners is increasing (Ministry of Justice, 2018a), and therefore it is important to understand health care use associated with this age group.

We also looked in specific detail at the use of hospital services by women prisoners – a small proportion of the total prisoner population (around 5%) but a group with distinct health care needs.

To compare prisoners' hospital service use to use by the non-prisoner population, we calculated age- and sex-specific activity rates for admitted patient care, outpatient appointments and A&E attendances. The calculation formula is provided in [Appendix C](#), which is provided in a separate Appendix document.

Datasets

The central analysis included men and women from all prisons and young offender institutions in the prison estate in England in 2017/18 – of which there were 112.

Table 2.1 shows the number of prisoner admissions to hospital in 2017/18 as well as the number of outpatient appointments and A&E attendances. The table also provides details on the proportion of hospital activity linked to male versus women prisoners.

As might be expected given that the prison population is predominantly male (House of Commons Library, 2019a), hospital activity linked to women prisoners was much lower than that linked to male prisoners. The table also shows the wide age range of prisoners accessing hospital services.

Table 2.1: Number of inpatient admissions, outpatient appointments and A&E attendances by prisoners, including percentage male/female and mean age and range, 2017/18

Dataset	No.	No. of people	% male/female	Mean age (range)
Admitted patient care (inpatient)	11,908 admissions	7,644	93% male, 7% female	44 years old (15–96 years)
Outpatient appointments	83,176 appointments	27,806	93% male, 7% female	43 years old (15–96 years)
A&E attendances	17,928 attendances – 13,796 did not result in an admission	9,934 (non-admitted)	93% male, 7% female	36 years old (15–116 years)

3 Findings on prisoners' use of hospital services

Key findings

- Prisoners had 24% fewer inpatient admissions and outpatient appointments in 2017/18 than the equivalent age and sex demographic in the wider population, and 45% fewer attendances at A&E departments.
 - Around 40% of outpatient appointments for prisoners were not attended (32,987 appointments) – double the proportion of non-attended appointments in the general population.
 - Over three-quarters of missed appointments were cancelled in advance or recorded as people simply not turning up on the day.
 - Only 2% of all outpatient consultations were carried out by telephone or video – compared with around 3% for the general population.
 - There was a noticeable drop in emergency admissions to hospital among the prison population in December 2017, which was not seen in the general population.
 - Injury, poisoning and certain other consequences of external causes were the most common reasons why prisoners were admitted to hospital, accounting for 18% of cases (2,169 admissions), compared with 6% of all admissions in the general population (aged 15+).
 - There were 508 hospital admissions as a result of head injuries, including fracture of the skull and facial bones, intracranial injuries and open scalp wounds.
 - There were also 415 A&E attendances by prisoners as a result of head injuries.
 - Psychoactive substance use was recorded in more than 25% of all inpatient admissions by prisoners.
 - Just over 40% of prisoners admitted to hospital had at least one chronic condition (3,184 people).
-

Admitted patient care (inpatient) activity

There were just under 12,000 inpatient admissions by 7,644 prisoners in 2017/18. Table 3.1 provides details of the total number of episodes of care (care provided by individual consultants during a stay in hospital) as well as the split between emergency, elective and other admission types.

Table 3.1: Summary statistics for prisoners’ admitted patient care activity, 2017/18

Number of admissions	11,908
Number of people	7,644
Episodes of care	14,428
% emergency admissions (n)	46% (5,420)
% elective admissions (n)	53% (6,310)
% other admission types* (n)	1% (178)

*Other admission types include maternity admissions, as well as transfers between hospitals or where the admission type is not specified.

Age- and sex-standardised admission rates

We calculated age- and sex-specific admission rates per 1,000 people to compare the number of inpatient admissions by prisoners to what we see in the general population (see the [appendix material](#) for admission-rate figures by age band). Table 3.2 shows the expected number of admissions for prisoners if admission rates were the same as the general population. This can then be compared to the actual number of admissions (see the ‘Observed’ column).

Table 3.2: Expected versus observed* admission rates for prisoners, 2017/18

Age band	Male inpatient admissions		Female inpatient admissions	
	Expected	Observed	Expected	Observed
15–17	52	50		
18–20	402	343	23	20
21–24	967	850	90	66
25–29	1,646	1,312	227	136
30–39	3,227	2,383	452	251
40–49	2,619	1,925	208	193
50–59	2,465	1,756	135	103
60+	3067	2,470	60	45
Total	14,445	11,089	1,195	814

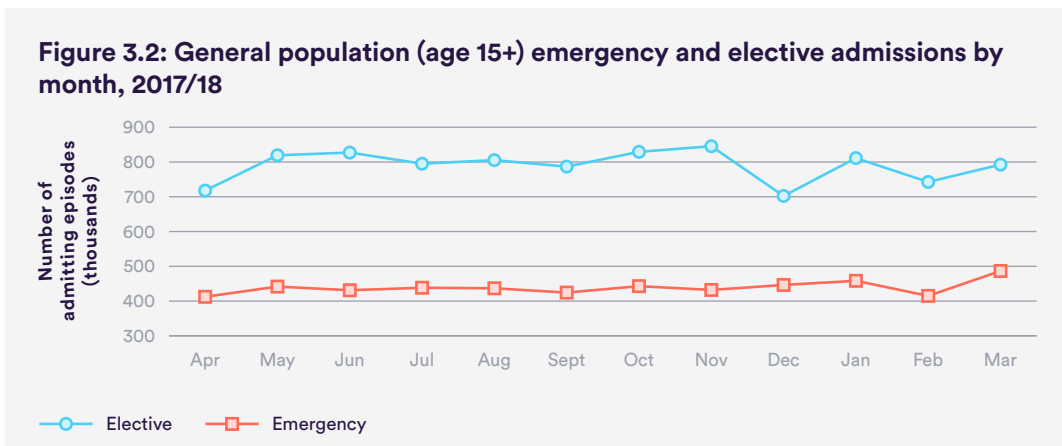
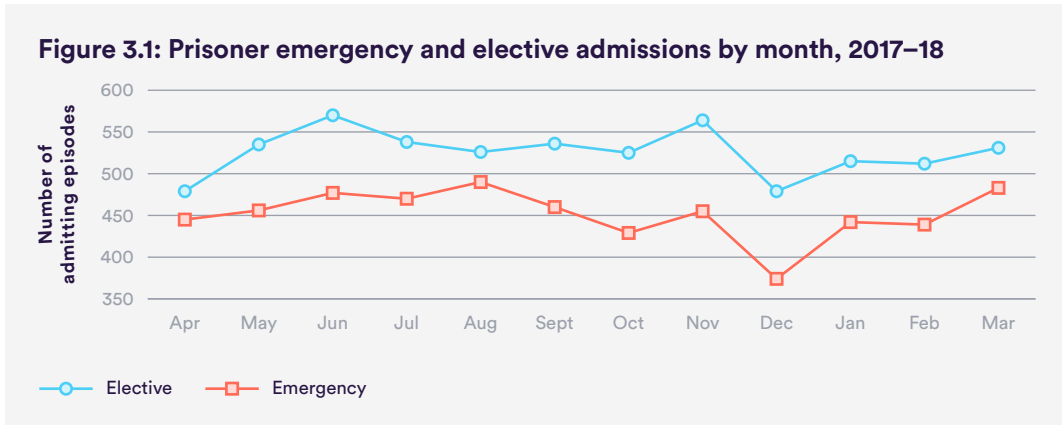
*‘Observed’ means difference between the total number of observed admissions by age and sex (11,903) versus the total number of admissions (11,908) reflects cases where the patient’s age or sex was not specified.

If prisoners had the same admission rate as is seen in the general population, we would have expected 15,640 admissions in 2017/18 rather than the actual number of 11,903. The overall admission rate for prisoners was 252 per 1,000 population – 24% lower than in the general population (where the admission rate was 331 per 1,000 population).

Emergency and elective admissions by month

We also looked at the number of hospital admissions for prisoners by month. Figure 3.1 shows the monthly trends in the total numbers of elective and emergency admission episodes across 2017/18, and Figure 3.2 shows equivalent figures for the general population aged 15+. While trends – specifically, changes from month to month – were similar between the prison population and the general population, for emergency admissions, there was a noticeable dip among prisoners in December 2017 (of around 18% on

November numbers), which was not seen in the general population (where the dip occurred in February 2018 and was less marked – an 11% drop on January emergency admissions).



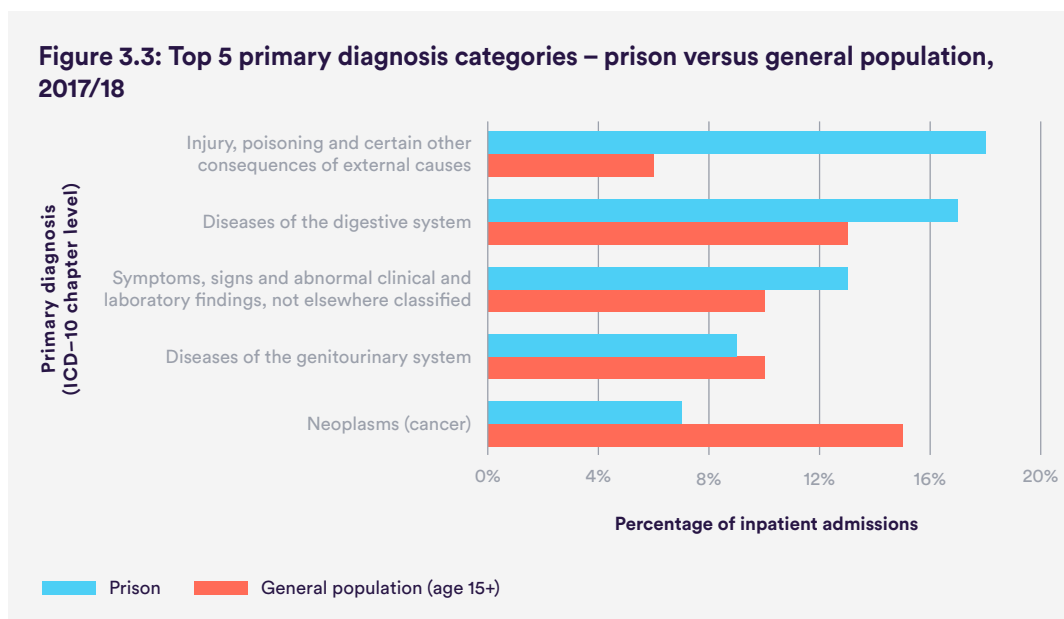
Why are prisoners admitted to hospital?

As an initial step towards understanding the sorts of reasons why prisoners are admitted to hospital, we examined primary admitting diagnosis at ICD-10 ‘chapter’ level (looking at both emergency and planned admissions) – see the box below for more information on diagnosis codes in hospital data.

Diagnosis codes in hospital data

There are up to 20 diagnosis fields available in admitted patient care data, although not all will be completed for each patient. Diagnosis codes in hospital data use codes from ICD–10, which is the 10th revision of the *International Statistical Classification of Diseases and Related Health Problems* from the World Health Organization (WHO). ICD–10 codes provide a way of classifying diagnoses into broad categories such as ‘neoplasms’ (cancer) at the highest level of ‘chapter’, which can then be broken down further into chapter blocks (such as cancer of the urinary tract) as well as further subcategories, and lastly individual diagnosis.

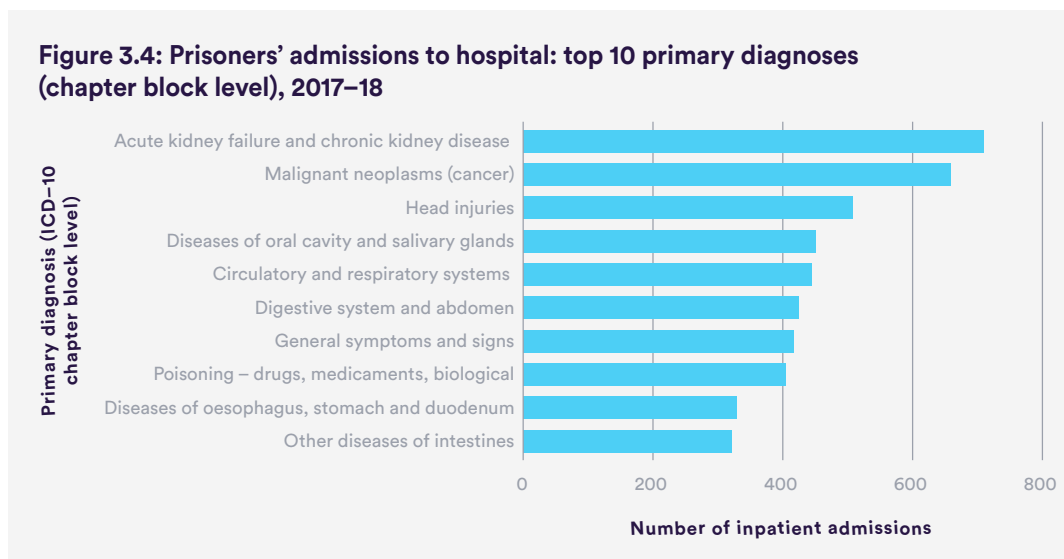
Figure 3.3 shows the five most common reasons why prisoners were admitted to hospital in 2017/18, with the most frequent reasons for admissions in the general population aged 15+ provided as a comparison.



For prisoners, injury, poisoning and certain other consequences of external causes were the most common cause of admissions to hospital, accounting for 18% of all admissions. If we look at the general population aged 15+, this category was eighth, and accounted for just 6% of all admissions. In the general population, neoplasms (cancer) were the most common cause of inpatient admissions, whereas this was the fifth most frequent reason for

admission for prisoners. For both prisoners and the general population, admissions linked to diseases of the digestive system were the second most common; 17% and 13% of admissions, respectively.

We then looked in more detail at the specific reasons why prisoners were admitted to hospital by breaking down the overall diagnosis categories (such as injuries and poisoning) into blocks. Whereas in Figure 3.3 we can see that ‘injury, poisoning and certain other consequences of external causes’ was the most common reason for an inpatient admission, in Figure 3.4, by looking at diagnosis categories split apart, we can see the burden of head injuries (third most common) versus admissions due to poisoning (eighth most common).



We then looked at an even finer level of detail – individual diagnosis codes. Table 3.3 shows the most common individual diagnoses for the top five diagnosis categories shown in Figure 3.4.

Table 3.3: The most common individual diagnoses within the top five diagnostic categories (ICD–10 chapter blocks) for prisoners, 2017/18

Diagnosis group	Description	No. of admissions (no. of people)
Acute kidney failure and chronic kidney disease	Chronic kidney disease	666 (21)
	Acute kidney failure	43 (40)
	Other and unspecified malignant neoplasm of skin	57 (29)
Malignant neoplasms	Malignant neoplasm of bronchus and lung	56 (24)
	Malignant neoplasm of bladder	52 (23)
	Malignant neoplasm of prostate	42 (30)
	Malignant neoplasm of colon	39 (11)
Injuries to the head	Fracture of skull and facial bones	308 (290)
	Open wound of head	92 (91)
	Intracranial injury	39 (36)
Diseases of oral cavity and salivary glands	Dental caries	242 (232)
Circulatory and respiratory systems	Pain in throat and chest	360 (317)

Patients with chronic kidney disease are predominantly driving activity linked to acute kidney failure and chronic kidney disease. If we then look at the primary procedures performed in patients admitted with a diagnosis of chronic kidney disease, we can see that 645 out of the 666 admissions involved haemodialysis. Also, the 666 admissions represented just a small number of patients (n=21) attending hospital regularly for dialysis (see NHS, 2018, for further details on dialysis).

When looking at specific head injuries leading to prisoners being admitted to hospital, 308 admissions were due to skull and facial bone fractures, 92 were due to an open head wound and 39 were due to intracranial injuries.

We also examined the primary procedures carried out in relation to dental admissions (diseases of oral cavity and salivary glands) to understand why prisoners were being admitted to hospital to address dental issues. Of the 242 admissions categorised as dental caries (tooth decay), surgical removal of wisdom teeth was conducted in 92 cases and extraction of multiple teeth was conducted in 50 cases.

Chronic health conditions

We explored what hospital service use can tell us about prisoners with long-term conditions, by choosing nine chronic health conditions seen in the general population and looking at how often they were recorded when prisoners were admitted to hospital. The specific conditions were selected in consultation with two clinicians who work within prisons.

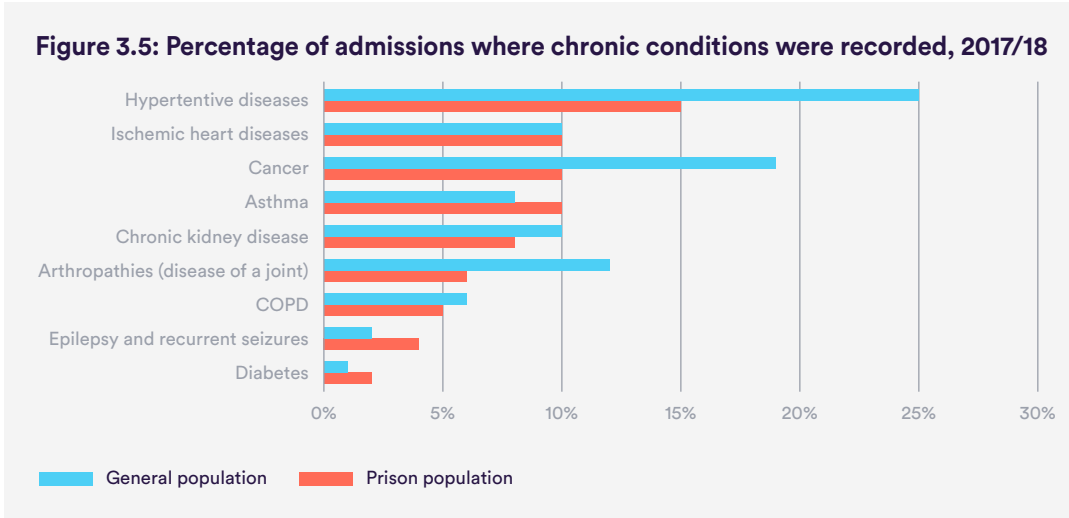
Table 3.4 shows the number of admissions for which each chronic condition was recorded, along with the number of admissions where this condition was the primary diagnosis, and the number of people with that condition. Fewer people than admissions reflects cases where people were admitted to hospital more than once. Hypertension (high blood pressure) was the most common chronic condition recorded for prisoners who were admitted to hospital, affecting more than 1,000 people, and was identified in 15% of all admissions. Of all prisoners admitted to hospital, 3,184 people (42%) had at least one of the selected chronic conditions – this compared to 53% of all admissions in the general population (aged 15+).

Aside from cancer, chronic conditions more commonly appear in subsidiary coding positions – that is, they are not the primary reason why a prisoner is admitted to hospital but they are noted as part of their diagnosis information.

Table 3.4: Chronic health conditions identified in prisoners’ inpatient admission coding, 2017/18

Chronic conditions	No. of admissions (no. coded in primary diagnosis coding)	No. of people
Hypertensive diseases	1,844 (11)	1,085
Ischaemic heart diseases	1,204 (281)	747
Cancer	1,145 (877)	567
Asthma	1,134 (33)	843
Chronic kidney disease	905 (45)	156
Arthropathies (diseases of the joints)	762 (286)	631
Chronic obstructive pulmonary disease (COPD)	648 (99)	394
Epilepsy and recurrent seizures	483 (53)	308
Diabetes	208 (77)	148

To compare prisoners’ rates of individual chronic conditions to the general population, we compared the percentage of all admissions where each of the nine long-term conditions was recorded (see Figure 3.5). This included conditions recorded in primary as well as secondary/subsidiary diagnosis coding. Figure 3.5 shows that conditions such as hypertensive diseases, cancer and arthropathies (diseases of the joints) were coded more frequently for those in the general population, while prisoners were more likely than people in the general population to be admitted with diabetes, epilepsy or asthma.



A detailed analysis of the reasons for admission for prisoners with chronic health conditions was outside the scope of this work. However, we looked at three conditions in more detail: diabetes, cancer and chronic kidney disease. We selected these conditions on the basis of coverage in the literature review as key health issues and, in the case of chronic kidney disease, the number of times it was noted as the primary reason for hospital admission for prisoners. These are also conditions that have been a focus of general health policy given the impact of poor condition management on health outcomes.

Diabetes

There is no publicly available data on the number of prisoners with diabetes, but a Royal College of Nursing audit of diabetic services in prison, conducted in 2009 (Booles, 2011), reported that of the 19 prisons that completed the audit questionnaire, 12 had 10 or more prisoners with diabetes in the previous year. In England in 2015, Public Health England (2016a) estimated that approximately 9% of the adult population had diabetes. On the basis that one in four people live with diabetes without knowing it (Public Health England, 2016a), it is likely that the prevalence of diabetics in prison is higher than small-scale study estimates, particularly due to the broader health issues affecting prisoners related to weight management, exercise and diet, which can increase the risk of type 2 diabetes in particular (see www.diabetes.org.uk).

In our research, in 51 of the 77 episodes where diabetes was the primary reason for admission to hospital, ‘diabetes with ketoacidosis’ (DKA) was

recorded, affecting 39 people (meaning some people were admitted more than once with this condition). DKA can be life-threatening as a lack of insulin means the body produces poisonous ketones (Diabetes UK, 2019).

Cancer

There were more than 1,000 admissions to hospital by prisoners where cancer was indicated, affecting more than 560 people. For prisoners where cancer was specified in the admission coding (in any coding position), we looked at the primary reasons for their admission to hospital to see if this would provide more information about different types of cancer affecting prisoners (see Table 3.5). For prisoners with cancer, this tended to be the main reason why they were being admitted to hospital. The most common ‘non-cancer’ primary reason for admission among prisoners with cancer was sepsis, which resulted in 31 admissions for 25 people.

Table 3.5: The 10 most common cancer diagnoses (including benign and malignant) among prisoners identified in primary admitting diagnosis coding

Cancer diagnosis	No. of admissions	No. of people
Benign neoplasm of colon, rectum, anus and anal canal	62	59
Other and unspecified malignant neoplasm of skin	57	29
Malignant neoplasm of bronchus and lung	56	24
Malignant neoplasm of bladder	52	23
Benign lipomatous neoplasm	43	41
Malignant neoplasm of prostate	42	30
Malignant neoplasm of colon	39	11
Hodgkin lymphoma	38	–
Non-follicular lymphoma	35	8
Malignant neoplasm of testis	33	13

Note: The symbol – indicates that small numbers have been suppressed due to reporting limitations.

We also looked at the most common procedure codes where patients were admitted to hospital with a cancer diagnosis (in any coding position) and the results are shown in Table 3.6. A small number of prisoners had to attend hospital regularly for chemotherapy treatment – 14 people accounted for 61 admissions to hospital for the delivery of chemotherapy. Ninety-three prisoners were admitted to hospital for removal of a skin lesion.

Table 3.6: Top five procedures where patients were admitted with a cancer diagnosis, 2017/18

Procedures	No. of admissions	No. of people
Procurement of drugs for chemotherapy for neoplasm in Bands 1–5	110	31
Other excision of lesion of skin	97	93
Procurement of drugs for chemotherapy for neoplasm in Bands 6–10	81	24
Delivery of chemotherapy for neoplasm	61	14
Endoscopic extirpation of lesion of colon	55	53

Chronic kidney disease

Acute kidney failure and chronic kidney disease accounted for 6% of all inpatient admissions by prisoners, predominantly driven by a small number of people with chronic kidney disease attending regularly for haemodialysis.

But, looking across all diagnosis fields, the number of admissions where chronic kidney disease was recorded as part of the diagnosis information increased from 45 to 905, and there was a sharp rise in the number of people affected, from 21 to 156. This suggests that, in addition to meeting the needs of prisoners who require dialysis, it is also important to consider the wider impact of conditions such as kidney disease on prisoners’ general health even if it is not the primary reason for hospital admission.

Psychoactive substances

To learn more about the health impacts of psychoactive substance use, we looked at how often it was noted in relation to a prisoner’s inpatient hospital admission – that is, we identified reference to psychoactive substance use in any admission coding position. Table 3.7 shows that just under 2,400 people were admitted to hospital with psychoactive substance use recorded; psychoactive substance use was coded in more than 25% of all inpatient admissions.

Table 3.7: Number of times psychoactive substances were identified in prisoners’ inpatient admission coding, 2017/18

Diagnosis	No. of admissions (no. where this was the primary diagnosis)	No. of people
Mental and behavioural disorders due to psychoactive substance use	3,160 (47)	2,397

Because psychoactive substance use covers a range of substances, we also looked at which specifically were recorded. Table 3.8 shows that mental and behavioural disorders due to use of tobacco were recorded most commonly, with 2,695 admissions.

Table 3.8: Number of admissions split by category of psychoactive substance use, 2017/18

Diagnosis	No. of admissions	No. of people
Mental and behavioural disorders due to use of tobacco	2,695	2,028
Mental and behavioural disorders due to use of opioids	498	431
Mental and behavioural disorders due to use of alcohol	180	150
Mental and behavioural disorders due to multiple drug use and use of other psychoactive substances	109	96
Mental and behavioural disorders due to use of cannabinoids	94	84
Mental and behavioural disorders due to use of cocaine	60	57

Because, in most instances, the substance use was not the primary reason for admission, we also looked at the most common reasons for admission where use of any type of psychoactive substance was indicated. We found that there were 133 admissions due to fracture of the skull and facial bones.

Violence in the secure estate

Although hospital data record ‘injury, poisoning and certain other consequences of external causes’ as a distinct diagnostic category, it is important to note that there are certain clinical diagnoses that may demonstrate the results of violence in the secure estate. To illustrate this, we looked at any hospital admission where a diaphragmatic hernia was indicated, as one example.

A diaphragmatic hernia is when an organ in the abdomen (either one or more of the stomach, intestines, spleen or liver) moves into the chest through a tear in the diaphragm. It is normally seen as a congenital condition, but in adults it can occur as the result of blunt force trauma. Research suggests that diaphragmatic hernia occurs in up to 15% of patients with blunt force trauma

(Thiam and others, 2015). In our research, overall there were 280 admissions where this was indicated, in relation to 243 people.

A&E attendances

There were 17,928 A&E attendances by prisoners, of which more than three-quarters (13,796) did not result in an admission to hospital. Table 3.9 shows the number of A&E attendances and the number and percentage of inpatient admissions from A&E. Of the A&E attendances by prisoners, 23% resulted in an inpatient admission. As a point of comparison, in 2017/18, 21% of all admissions to A&E for people aged 15+ resulted in an inpatient admission.

Table 3.9: Number of A&E attendances and number and percentage of inpatient admissions from A&E, 2017/18

Number of A&E attendances	17,928
Number of inpatient admissions resulting from A&E attendances	4,132
% of inpatient admissions resulting from A&E attendances	23%

Age- and sex-standardised A&E attendances

Table 3.10 shows the number of A&E attendances by prisoners (see the observed column) and the number we would expect to see if attendance rates were the same as those seen in the general population. Age- and sex-standardised A&E attendance rates by age band can be found in Appendix E, which is provided in a separate Appendix document.

Table 3.10: Expected versus observed* A&E attendance rates for prisoners, 2017/18

Age band	Male A&E attendances		Female A&E attendances	
	Expected	Observed	Expected	Observed
15–17	173	256		
18–20	1,537	726	51	37
21–24	3,445	1,607	144	104
25–29	4,975	2,523	254	155
30–39	7,190	3,801	422	335
40–49	3,627	2,014	210	190
50–59	1,856	1,090	97	105
60+	1,113	798	26	38
Total	23,916	12,815	1,204	964

*‘Observed’ means the sum of observed A&E attendances (13,779) does not equal the total number of A&E attendances (not resulting in an admission to hospital) (13,796) due to instances where there was no record of the patient’s age and/or sex.

For the general population, the overall A&E attendance rate was 49 per 1,000 population. For the prison population, however, the equivalent rate was 34 per 1,000 population. If prisoners had the same number of A&E attendances as the rest of the population, we might have expected 25,120 attendances (excluding those leading to admission). Prisoners therefore had just 55% of expected attendances – representing a shortfall of more than 11,300 attendances (11,341). For men, in all age groups except for 15- to 17-year-olds, A&E attendances were higher in the general population than in the prison population. For women, A&E attendances were higher in the general population than in the prison population in all age groups apart from 50- to 59-year-olds and those aged 60+.

Waiting times

We calculated the length of time prisoners spent in A&E when they attended using the four-hour waiting-time target (that 95% of patients should spend no more than four hours in A&E before being admitted, transferred or discharged) as a benchmark for comparison as well as the rates achieved in the general population. Only 81% of prisoners attending A&E met the four-hour waiting-time target in 2017/18, therefore less than the target standard but also lower than the 84% of patients in the general population aged 15+ who were seen and either admitted, transferred or discharged within four hours.

Diagnoses linked to A&E attendances

Table 3.11 shows the top 10 diagnoses linked to A&E attendances by prisoners in 2017/18. Some of the diagnoses mirror those shown in the admitted patient care (inpatient) data – in particular, activity linked to poisoning and head injuries. The A&E figures reported exclude episodes where the patient was subsequently admitted to hospital as these episodes are addressed separately in the admitted patient care analysis.

Diagnosis information in A&E data is frequently incomplete or inaccurately recorded. We found that for 20% of attendances by prisoners, no diagnosis information was provided, and for 8% of attendances, diagnosis coding was invalid. The most frequent diagnosis recorded in the A&E data was ‘diagnosis not classifiable’. This also points to the incompleteness of A&E data, which lack the level of detailed diagnosis coding provided in inpatient data. It is also feasible that there are differences in coding practice between organisations, and it may be that in some instances missing data may also encompass where diagnosis is not classifiable.

Table 3.11: Top 10 diagnosis descriptions associated with prisoners' A&E attendances, 2017/18

A&E diagnosis description	Frequency (no. of people)	%
Diagnosis not classifiable	1,353 (1,189)	9.8%
Laceration	1,263 (994)	9.2%
Dislocation/fracture/joint injury/amputation	1,217 (1,138)	8.8%
Poisoning (including overdose)	634 (560)	4.6%
Contusion/abrasion	543 (532)	3.9%
Sprain/ligament injury	429 (417)	3.1%
Head injury	415 (400)	3.0%
Nothing abnormal detected	412 (389)	3.0%
Cardiac conditions	401 (341)	2.9%

Outpatient appointments

The prisoner outpatient data included 83,176 appointments. We calculated the expected number of outpatient appointments for prisoners by age and sex if appointment rates were the same as those in the general population. Table 3.12 compares what we would expect appointment levels to be versus the number of appointments actually scheduled (observed). A breakdown of age- and sex-standardised outpatient appointment rates per 1,000 people can be found in **Appendix F**, which is provided in a separate Appendix document.

Table 3.12: Expected versus observed outpatient appointment rates for prisoners, 2017/18

Age band	Male outpatient appointments		Female outpatient appointments	
	Expected	Observed	Expected	Observed
15–17	631	571		
18–20	3,447	2,048	155	96
21–24	7,411	5,324	601	378
25–29	12,371	9,627	1,655	1,000
30–39	24,459	19,934	3,713	2,228
40–49	18,989	15,559	1,756	1,509
50–59	15,558	11,852	1,027	859
60+	17,522	11,760	378	361
Total	100,388	76,675	9,285	6,431

For the general population, the outpatient appointment rate was 2,244 per 1,000 population. For prisoners, however, the equivalent rate was 1,700 per 1,000 population. If the prison population had the same appointment rates by age and sex as the general population, the expected overall number of outpatient appointments would have been 109,673 (100,388 male, 9,285 female). Prisoners therefore had just 76% of expected appointments – representing a shortfall of more than 26,500 appointments.

Attendance rates

Table 3.13 shows that just under 60% of prisoner outpatient appointments (n=50,189) were attended, while around 40% (approximately 33,000) of appointments were missed in 2017/18. Just under 80% of outpatient appointments in the general population for patients aged 15+ were attended (over 85.5 million) while around 20% of outpatient appointments were missed (around 22.7 million). Non-attendances included patient cancellations, health care provider cancellations or where no prior warning was given. Breaking

down the reasons for non-attendance, 16% (n=13,523) were categorised as ‘did not attend – no advance warning given’. As a point of reference, 6% of all outpatient appointments in the general population, for patients aged 15+, were not attended for the same reason, therefore meaning non-attendances from prison were more than double those seen among the general population.

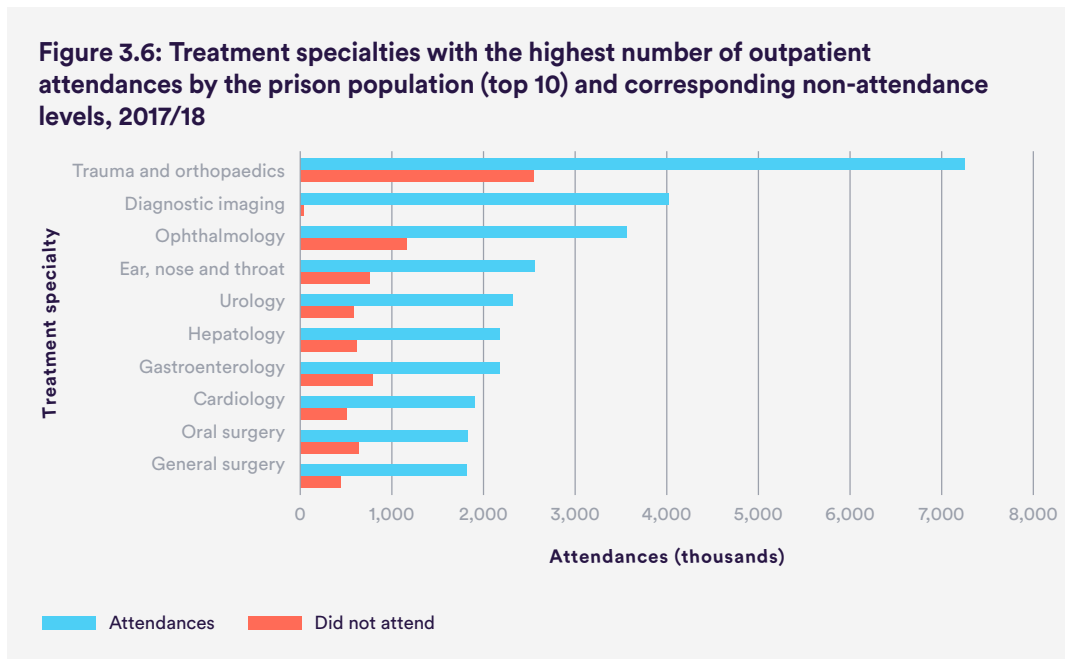
Table 3.13: Percentage and number of prisoner outpatient appointments attended, and not attended, categorised by reason, and compared with the general population, 2017/18

Appointment categorisation	Prison population	General population %
Appointment cancelled by, or on behalf of, the patient	15 (12,176)	7
Did not attend – no advance warning given	16 (13,523)	6
Appointment cancelled or postponed by the health care provider	9 (7,288)	7
Seen, having attended on time or, if late, before the relevant care professional was ready to see the patient	58 (48,636)	77
Arrived late, after the relevant care professional was ready to see the patient, but was seen	2 (1,357)	1
Did not attend – patient arrived late and could not be seen	0.1 (39)	0.03
Not known	0.2 (157)	0.3

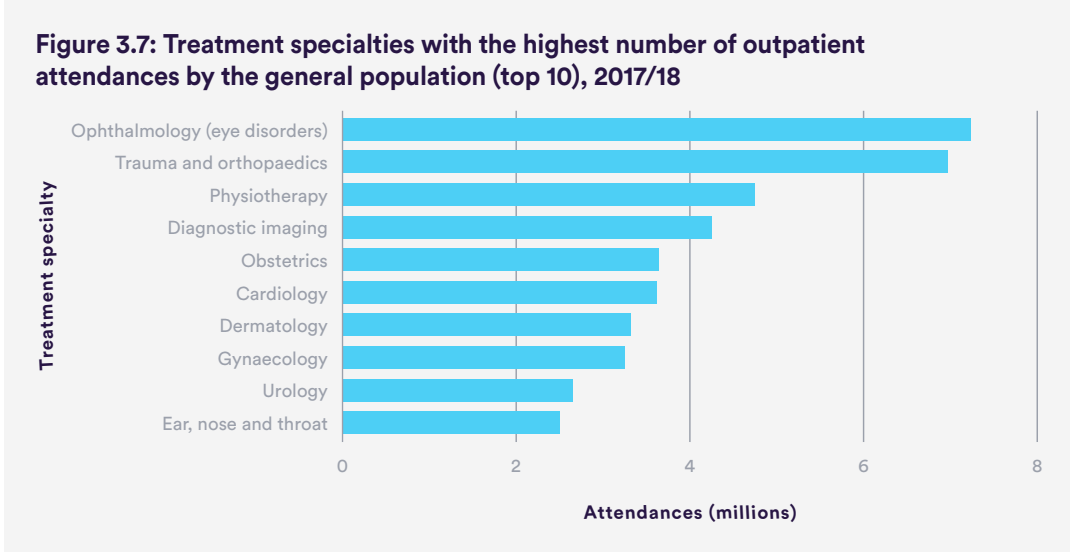
Overall, prisoners’ outpatient appointments were much more likely than those for the general population to be cancelled in advance or simply not attended on the day with no prior warning (30.9% in total of all appointments). In the general population, cancelled outpatient appointments or no-shows were 13.5%.

Outpatient activity by treatment speciality

Figure 3.6 shows the 10 treatment specialties with the highest number of prisoner outpatient appointments in 2017/18. The number of missed appointments for these treatment specialties is also highlighted. The highest number of attendances occurred for trauma and orthopaedics (n=7,255). Collectively, attendances across the 10 specialties accounted for 59% of all prisoner outpatient appointment attendances.



As a point of comparison, Figure 3.7 shows the treatment specialties with the highest number of outpatient appointments attended by patients in the general population in 2017/18. Although there were similarities to the top treatment specialties attended by prisoners, in the general population physiotherapy was the third most common treatment specialty for attended appointments, but it did not feature at all in the top 10 for prisoners.



Outpatient data also record whether the scheduled appointment was a first attendance or a follow-up appointment. The numbers were relatively evenly split, with 54% being first appointments (n=44,697) and 46% being follow-up appointments (n=38,398).³

Telephone/telemedicine consultations

We also looked at whether prisoners’ outpatient appointments took place face-to-face or via telephone or video (telemedicine) consultation. Table 3.16 provides details of the top 10 treatment specialties where telephone/telemedicine appointments were taking place. There were 842 such consultations recorded in 2017/18. This equated to 2% of all attended outpatient appointments – compared with around 3% for the general population. Trauma and orthopaedics was the specialty where they most commonly took place (n =154).

3 Information on whether it was a first appointment or follow-up appointment was not provided in 81 cases.

Table 3.14: Treatment specialties where prisoners' outpatient appointments were conducted via telephone or telemedicine consultation (top 10), 2017/18

Treatment specialty	Frequency	% of all telephone/telemedicine consultations
Trauma and orthopaedics	154	18%
General surgery	47	6%
Cardiology	47	6%
Hepatology	46	5%
Gastroenterology	43	5%
Urology	41	5%
Anaesthetics	37	4%
Clinical haematology	37	4%
Ear, nose and throat	36	4%
Diabetic medicine	31	4%

4 Findings on older prisoners' use of hospital services

Key findings

- Older prisoners – those aged 50+ – have poorer access to hospital services than people of the same age in the general population. In 2017/18, they had 24% fewer inpatient admissions, 28% fewer outpatient appointments and 34% fewer A&E attendances than older people who were not in prison.
 - Older prisoners also missed more outpatient appointments than the general population aged 50+: 35% compared with 20%, but missed fewer appointments than the prison population as a whole (35% versus 40%)
-

The age profile of the prison population is younger than the general population but the number of older prisoners is increasing. There is debate in the prisoner health literature about what it means to be an older person in prison, but older age is discussed in the context of prisoners aged 50 and over (Hayes, 2012; Ware, 2009). This is earlier than when adults in the general population are generally classified as 'older', which tends to be when people are aged over 65 years old (NHS England, 2020). In 2019 there were over 13,000 prisoners aged over 50 years old (BBC News, 2019).

Table 4.1 provides a breakdown of the use of hospital services by prisoners aged 50–59 and those aged 60+. More than a third (37%) of all inpatient admissions, 32% of outpatient appointments and 15% of A&E attendances by prisoners in 2017/18 were for those aged 50+.

Table 4.1: Number and percentage of hospital admissions, outpatient appointments and A&E attendances by male and women prisoners aged 50+, 2017/18

Age band	Inpatient admissions		Outpatient appointments		A&E attendances	
	No.	%	No.	%	No.	%
50–59	1,859	16	7,895	16	1,195	9
60+	2,515	21	8,077	16	840	6
Total (no. of people)	4,374 (2,319)		15,972 (6,674)		2,035 (1,438)	

The top five primary diagnoses at admission to hospital for prisoners aged 50+ are shown in Table 4.2.

Table 4.2: Primary diagnosis at hospital admission for prisoners aged 50+, 2017/18

Primary diagnosis	No. of admissions (% of all admissions by prisoners aged 50+)	No. of people
Malignant neoplasms (cancer)	403 (9%)	175
Acute kidney failure and chronic kidney disease	389 (9%)	37
General symptoms and signs	250 (6%)	88
Symptoms and signs involving the circulatory and respiratory systems	215 (5%)	193
Ischaemic heart disease	206 (5%)	160

We found that, as seen in the overall prisoner population, older prisoners missed a disproportionate number of outpatient appointments. Table 4.3 shows that 35% (8,867) of outpatient appointments for prisoners aged 50+ were missed in 2017/18. Of the missed appointments for prisoners, 12% were categorised as ‘did not attend – no advance warning given’, which was more than double the rate of such cancellations in the general population aged 50+ (5%).

Table 4.3: Percentage and number of outpatient appointments attended and not attended by prisoners and the general population aged 50+, categorised by reason, 2017/18

Reason	Prisoners aged 50+ % (no.)	General population aged 50+ %
Appointment cancelled by, or on behalf of, the patient	14 (3,492)	7
Did not attend – no advance warning given	12 (3,007)	5
Appointment cancelled or postponed by the health care provider	9 (2,368)	8
Seen, having attended on time, or, if late, before the relevant care professional was ready to see the patient	62 (15,417)	79
Arrived late, after the relevant care professional was ready to see the patient, but was seen	2 (491)	1
Did not attend – patient arrived late and could not be seen	0.1 (9)	0.02
Not known	0.2 (55)	0.3

5 Findings on women prisoners' use of hospital services

Key findings

- In 2017/18, women prisoners had 32% fewer inpatient admissions, 31% fewer outpatient appointments and 20% fewer attendances at A&E departments than the equivalent age and sex demographic in the general population.
 - Eighty-three women in prison were admitted to hospital either during pregnancy or to give birth.
 - For women admitted at some point during their pregnancy, a significant proportion also had co-occurring mental health concerns, including 34 with concerns related to tobacco use, 26 with concerns related to opioid use and 23 experiencing depressive episodes.
 - In 2017/18, 56 women prisoners gave birth. Fifty of these births took place in hospital but six women (representing just over one in 10 women) delivered before they reached hospital, meaning that the birth took place either in a prison cell or en route to hospital.
 - In terms of missed appointments, 22% of pregnant prisoners missed midwife appointments and 30% missed obstetric appointments, compared with 14% of midwifery appointments and 17% of obstetric appointments missed in the general population.
-

Women account for approximately 5% of the prisoner population (House of Commons Library, 2019a), but have different health needs from male prisoners. So we looked at the reasons why women in prison use hospital services to consider what this tells us about how well their health care needs are being met.

In this chapter we first present the findings for all women prisoners and then we look specifically at hospital use in relation to pregnancies, deliveries and births among the female prisoner population.

The dataset included women from 12 prisons/young offender institutions in England. Table 5.1 shows how often women prisoners used hospital services and the gap between what we would expect their hospital use to be, based on activity rates for the same age profile in the general population, and what we observed. For admitted patient care, A&E and outpatient appointments, women in prison used services less than would be expected.

Table 5.1: Observed versus expected use of hospital services by women prisoners, 2017/18

	No.	No. of expected visits	Gap between observed and expected use of services (%)
Inpatient admissions	814	1,195	381 (32%)
A&E attendances	964	1,204	240 (20%)
Outpatient appointments	6,431	9,285	2,854 (31%)

Admitted patient care (inpatient) activity

As an initial overview of why women in prison are admitted to hospital, we looked at the primary diagnosis codes recorded on admission for women. Table 5.2 shows the top five primary diagnoses. Diseases of the digestive system were the most commonly reported – this covers things like dental

issues, hernias and stomach and gallbladder problems. Pregnancy-related diagnoses and issues to do with injury, poisoning and certain other consequences of external causes also featured commonly. In the general population of women of the same age band, neoplasms (cancer) were the most common reason for an inpatient admission, but this did not feature in the top five diagnosis groups for women prisoners. Similarly, injury, poisoning and certain other consequences of external causes did not appear in the top five diagnosis categories for women in the general population.

Table 5.2: Top five primary diagnoses for women prisoners, aggregated by ICD-10 chapter, 2017/18

Primary diagnosis	No. of episodes
Diseases of the digestive system	145
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	126
Pregnancy, childbirth and the puerperium	107
Injury, poisoning and certain other consequences of external causes	88
Diseases of the musculoskeletal system and connective tissue	58

Diseases of the digestive system

To explore why women prisoners with diseases of the digestive system were being admitted to hospital, we extended this analysis to look across all diagnosis fields, as patients can have multiple diagnoses recorded (up to 20). This increased the number of episodes where diseases of the digestive system were recorded in at least one instance, from 145 to 221.

We then broke this down further to look in more detail at the most common types of diseases of the digestive system that women were presenting with. These are listed in Table 5.3. Dental problems (diseases of oral cavity, salivary glands and jaws) were the most common reason for admission, which is consistent with findings relating to high levels of dental health needs in the prison population overall.

Table 5.3: Most commonly recorded diseases of the digestive system for women prisoners admitted to hospital, 2017/18

Diseases of the digestive system	No. of episodes
Diseases of oral cavity, salivary glands and jaws	56
Other diseases of intestines	49
Diseases of oesophagus, stomach and duodenum	36
Disorders of gallbladder, biliary tract and pancreas	32
Hernia	23

Falling under the category of hernia, a number of instances of diaphragmatic hernia were recorded (n=19). This was something that we also noted in our overall analysis in Chapter 3, as it has implications for managing violent incidents in the secure estate; the possibility of diaphragmatic hernia when reviewing patients at initial health care assessment needs to be acknowledged.

A&E attendances

There were 1,260 A&E attendances by women prisoners in 2017/18; approximately one in four (23%) resulted in a hospital admission. The four-hour waiting-time target (which involves patients in A&E being seen and either admitted, transferred or discharged within four hours) was met for 80% of cases, which falls below the national target standard of 95% and is also less than the 83% of women in the general population aged 15+ who were seen and either admitted, transferred or discharged within four hours.

To explore why women prisoners attended A&E, we looked at the primary diagnosis recorded (see Table 5.4). Similar to the findings for the prisoner population overall, there were issues over A&E data quality – 163 records (19%) did not specify a diagnosis, and there were 29 invalid entries. In terms of recorded diagnoses, lacerations were one of the most common reasons for A&E attendances for women prisoners, similar for prisoners overall. In addition, musculoskeletal conditions – such as dislocations, fractures and soft tissue inflammation – made up 9% of all A&E attendances by women; also similar for the prison population as a whole.

Table 5.4: Most common diagnoses recorded for women prisoners attending A&E, 2017/18

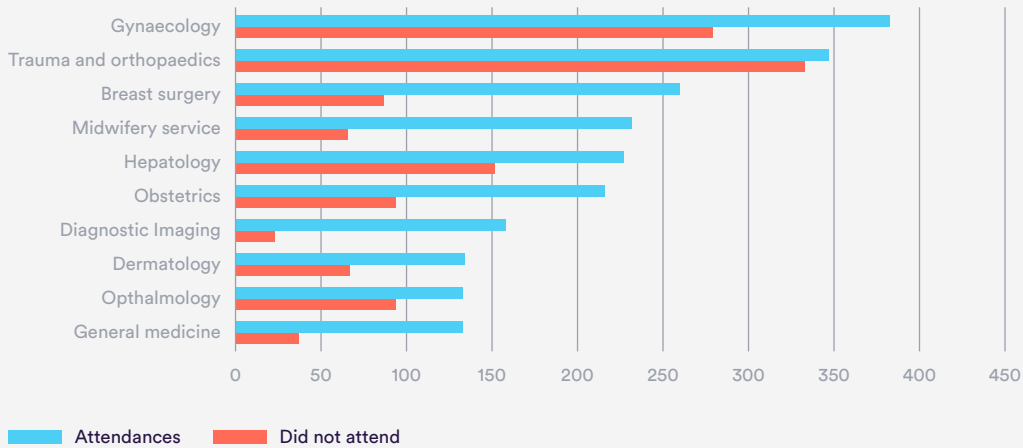
Description of diagnosis code	No. of A&E attendances
Diagnosis not classifiable	101
Laceration	82
Nothing abnormal detected	52
Dislocation/fracture/joint injury/amputation	47
Gastrointestinal conditions	46
Soft tissue inflammation	39
Poisoning (including overdose)	38
Central nervous system conditions (excluding stroke)	38
Respiratory conditions	32
Cardiac conditions	29

Outpatient appointments

In 2017/18, 3,912 outpatient appointments were attended by women prisoners, out of a total of 6,431 appointments, meaning nearly 40% of appointments were cancelled or missed. In comparison, in the general population, 21% of women’s (aged 15+) outpatient appointments were either cancelled or missed in 2017/18.

The most common treatment specialities for those women prisoners who attended their appointments are shown in Figure 5.1. ‘Did not attend’ (DNA) rates are also provided as a point of comparison.

Figure 5.1: Number of outpatient appointments for female prisoners by treatment specialty, 2017/18



Pregnancies, deliveries and births

Hospital admissions during pregnancy or childbirth

There were 120 hospital admissions by 83 women prisoners for medical care relating to pregnancy or childbirth in 2017/18. This included admissions where diagnosis coding (in any coding position) specified either an outcome of delivery or an admission classified under ‘pregnancy, childbirth and the puerperium’.⁴ Table 5.5 shows that the most common primary reason for admission was for care related to possible delivery problems or complications of labour and delivery.

⁴ Codes included those for ‘pregnancy, childbirth and the puerperium’ (O00 – O99) and ‘persons encountering health services in circumstances related to reproduction’ (Z32 – Z39) of ICD-10.

Table 5.5: Primary diagnosis in admissions where pregnancy or delivery care needs were recorded in any coding position, 2017/18

Primary diagnosis	No. of episodes	No. of people
Maternal care related to the foetus and amniotic cavity and possible delivery problems	34	26
Complications of labour and delivery	31	31
Other maternal disorders predominantly related to pregnancy	25	19
Persons encountering health services in circumstances related to reproduction	12	11

A significant proportion of these women also had co-occurring mental health concerns. We examined the 120 hospital admissions where pregnancy or childbirth care needs were flagged, to see, outside of pregnancy and birth, which individual diagnoses were commonly recorded. One of the most frequent co-occurring diagnosis was broad psychosocial circumstances, as well as mental and behavioural disorders due to use of tobacco or opioids and depressive episodes.

Table 5.6: Most common co-occurring diagnoses where pregnancy, childbirth or the post-natal period was implicated, 2017/18

Most common co-occurring diagnosis	No. of admitting episodes (no. of people)
Personal history of certain other diseases	41 (34)
Problems related to other psychosocial circumstances	41 (38)
Mental and behavioural disorders due to use of tobacco	34 (34)
Mental and behavioural disorders due to use of opioids	26 (26)
Depressive episodes	23 (23)

Pregnancy admissions

Hospital admissions during pregnancy excluding for labour and delivery can be for issues relating to the mother’s health as well as care needs related to the unborn baby. Examining the 50+ diagnosis groups that cover pregnancy-related health care needs,⁵ we identified any admissions where these diagnoses were flagged at least once. This revealed 102 pregnancy-related admissions for 74 women. These were for reasons including supervision of high-risk pregnancy and maternal care for problems with the unborn baby. Table 5.7 shows the individual pregnancy-related diagnoses that presented most frequently – small numbers mean that not all diagnoses can be reported.

Table 5.7: Top five pregnancy-related diagnoses in any coding position, 2017/18

Pregnancy-related diagnosis	No. of episodes	No. of people
Supervision of high-risk pregnancy	30	28
Maternal care for other foetal problems	21	20
Maternal care for other conditions predominantly related to pregnancy	18	14
Infections of genitourinary tract in pregnancy	7	7
Multiple gestation	7	–

Some of these women may then go on to give birth while serving a prison sentence, but others may have left prison before giving birth and therefore do not subsequently appear as a birth-related admission. Conditions relating to pregnancy were highlighted in 144 instances across these admissions, with some women receiving multiple pregnancy-related diagnoses coding. The average (mean) length of stay for a pregnancy-related admission was 2.8 days (median = 1.0 day).

5 Includes ICD-10 codes O00–O48 and Z32–Z36.

It is important to note that there are a small number of women in prison who are pregnant with more than one child as places for women with multiple births on mother and baby units are limited.

Outpatient appointments

Women in prison also attend outpatient appointments to manage health care needs during pregnancy. There were more than 600 midwifery or obstetrics appointments for pregnant prisoners in 2017/18 (298 midwifery appointments and 310 obstetrics appointments). More than one in five (22%) pregnant prisoners missed midwife appointments and almost a third (30%) of pregnant prisoners missed obstetric appointments in 2017/18. These rates are lower than the 'did not attend' rate for women prisoners overall (39%) but significantly higher than those in the general population. In the general population aged 15+, 14% of midwifery appointments were missed and 17% of obstetric appointments were missed in 2017/18.

Deliveries and births

In 2017/18, 56 women in prison gave birth. There are various ways in which hospital data allow us to identify women attending hospital for delivery, and each spell of care in hospital where a baby is delivered should record a birth outcome. Fifty of these births⁶ took place in hospital but six women (representing just over one in 10 women) delivered before they reached hospital, meaning the birth took place either in a prison cell or en route to hospital.

We looked at procedure codes to identify women in prison who attended hospital for delivery, as diagnosis coding cannot always clearly distinguish between attendance for delivery and attendance related to pregnancy.

While normal delivery was recorded for 37 of the 50 women, for eight women, caesarean sections were undertaken. The proportion of women undergoing caesarean section (16%) was higher than the World Health Organization's (2015) reported 'ideal rate', which is 10–15%.

6 Births were defined by diagnosis code Z37, which indicates the outcome of delivery on the mother's record.

Women who gave birth in 2017/18 after leaving prison

Prisons hold women at all stages of pregnancy, some of whom leave prison before giving birth. In 2017/18, 10 women gave birth while no longer in prison but having spent time in prison that year.

Where are women giving birth if not in hospital?

We also looked at whether hospital data could be used to identify whether women in prison had given birth before being taken to hospital – this should not happen as prisons are not equipped in terms of staff or equipment to support a woman in labour.

In the event that a woman gives birth in prison, both they and their baby should still be taken to hospital for a check-up afterwards, and therefore the mother will be identifiable as attending for post-natal care. We identified women who may have given birth before arriving at hospital in two ways. First, we ran a search to look at hospital admissions by women where the primary diagnosis was ‘care and examination immediately after delivery’, but where there was no procedure code indicating labour and no outcome of delivery code indicated on the episode of care. Whereas we might expect this diagnosis code to appear as a secondary/subsidiary diagnosis following an ordinary delivery episode, where it appears as the primary reason for admission this might indicate that a woman gave birth in prison or en route to hospital.

Second, we looked at where hospital episodes identified a complication of delivery without an outcome of delivery code recorded. It is not possible to determine the exact reasons for this but it may be the result of women giving birth before being taken to hospital.

In total, we identified six hospital admissions where post-delivery care was indicated with no outcome of delivery defined, which suggests that the women may have given birth before being taken to hospital. The data do not definitively indicate where birth took place, but this raises the question of how prisons manage care in cases where women go into labour suddenly, as well as whether there are aspects of the prison environment which mean women are delayed reaching hospital when delivery is under way.

Complications of labour and delivery

Complications of labour and delivery (one or more) were recorded for 44 women. Table 5.8 reports the number of women experiencing certain complications and the proportion this represents of births. This includes directly recorded births, as well as cases where birth was indicated based on complications of delivery being noted in coding (n=54).⁷

Table 5.8: Complications of labour and delivery, 2017/18

Most common complications of labour and delivery	No. of people (% of births)
Perineal laceration during delivery	22 (41%)
Post-partum haemorrhage	11 (20%)
Pre-term labour and delivery	7 (13%)
Labour and delivery complicated by foetal stress [distress]	7 (13%)

Of the complications, 20% related to post-partum haemorrhage. This is slightly higher than the percentage of women in the general population who experienced this (19%) in 2017/18 (NHS Digital, 2018d), but care should be taken when comparing figures due to the small number of women prisoners giving birth and uncertainty about women who are effectively missing in the data.

⁷ The two births identified on the basis of care and examination post birth are excluded from this total as we have no information on the nature of the deliveries themselves.

6 Discussion: what next for prisoner health care?

While there is a body of research into the health needs and service use of the prison population in England and Wales, the focus has largely been on mental health, with less attention given to physical health. Information used to inform the commissioning of health services for prisoners tends to be piecemeal and largely based on local needs assessments (see, for example, North of England Commissioning Support Unit, 2019), with little or no publicly available national data to draw upon.

Many people in contact with the criminal justice system have complex needs arising from experiences such as homelessness, unemployment and being in care, and a relatively high proportion of this population have a history of substance and alcohol misuse (Prison Reform Trust, 2018; NHS England, 2016a). But answers to the questions of how these people use health services and to what extent services are meeting their physical health care needs are less well known.

By using a novel approach to identifying the hospital service use of this population group, our research provides national-level data, which marks a step towards a better understanding of the needs of prisoners and identifying where there may be gaps. Our analysis has enabled us to draw comparisons between the use of services within the prison population and that of the general population. Given the commitment to commission and provide equivalence of health care to prisoners, and the ambition to reduce inequalities, it is important that such comparisons are explored and understood.

What do we know about prisoners' use of hospital services?

Our analysis of hospital data supports the existing evidence on complexity of need concerning drug use and self-harm and suggests that prisoners are presenting with a set of needs that are distinct from the general population. Admissions for injury and poisoning, for instance, far outstripped rates seen in the general population. Health injuries and psychoactive substance use also featured highly in admission and attendance data. In 2018/19, psychoactive substances were found in just over half (51%) of all positive random drug tests in prison (Ministry of Justice, 2019a). Not all drug use will be identified and formally recorded, though, and in cases where prisoners' resulting health care needs are managed within the prison itself by health care staff, they will not appear in hospital numbers. The figures in hospital data are therefore merely indicative of the usage and impact of psychoactive substances such as spice in the secure estate – but, if anything, they represent a minimum.

Our analysis diverges from what might be expected when looking at the frequency of use of services. Given that the prison population appears to have greater and more complex needs than the general population, we might expect to observe a correspondingly higher hospital service utilisation. But this is not what our analysis reveals. In the year of data examined, prisoners had fewer inpatient admissions, outpatient attendances and A&E visits than the general population. There was also a sharp drop in emergency admissions for prisoners in December – something not seen in the general population. The rate of missed outpatient appointments was 40%, double that of the general population, and 22% of pregnant prisoners missed midwife appointments compared to 14% in the general population. Hospital admissions for complications from diabetes, for example, also suggest that prisoners are presenting with potentially avoidable conditions.

Our analysis of pregnant women prisoners' use of hospital services also reveals that just over one in 10 (six women) delivered before they reached hospital, meaning birth took place either in a prison cell or en route to hospital.

What might explain these patterns?

There is no directly comparable prior research at a national level with which to compare our findings. However, work by Marshall and others (2001) carried out in 1997/98 – before the NHS took over control of health care commissioning in the prison estate – also reported that prisoners’ admission rates to hospital were lower than expected when compared to a community sample. While low use of hospital services in the general population could be interpreted as an indication of high quality, timely and responsive primary and community care (NHS England, 2014), it is not clear that this is the case for the prison population.

Measuring use of health services provided within prisons was outside the scope of this study, but a Health Select Committee inquiry found that health care provided within prisons is highly variable and that provider contracts did not always map on to the needs of prison populations. The same inquiry noted that prisoners had complained about poor access to in-prison health services, a lack of access to the pharmacy services that the general population enjoys and delays in accessing hospital-based services (House of Commons Health and Social Care Committee, 2018). Certainly, prisoners attending hospital with avoidable complications from long-term conditions suggests that proactive primary care and ongoing conditions management is not as effective as it could be.

The literature reviewed for this study and the views of experts consulted during the course of the project suggest that there are likely to be a number of reasons for the comparatively low use of hospital services by prisoners. While prisoners do receive some health care in prison, the way prisoners access hospital services is a key factor in comparing the volume of service use with the general population. Prisoners do not have the same choice as people in the general population regarding the way they access services. They are unable to choose to sit and wait at A&E, for instance, if they are unhappy with what their GP has advised, and there are minimal opportunities for self-care such as visiting a pharmacist for advice.

At least part of the gap in service use between prisoners and the general population is a product of access being restricted. These restrictions include

the way prisoners are triaged by health care professionals within prison; how different prisoners' health care needs are prioritised; how many escorts each prison has available per day; and, not least, the sheer practicalities involved in getting prisoners to appointments – meaning staffing issues then come into play.

Public Health England's review of health care in prisons (2016b) concluded that staff shortages have a knock-on impact on health as well as access to health care – in particular secondary care services. A lack of staff can impact on health in a number of ways. Fewer staff available for supervision means that prisoners are less likely to be able to leave their cells and exercise or take part in other activities that might promote health and wellbeing. It also means that there are fewer staff available to respond to prisoners reporting illness or to escort them to in-prison health facilities. As noted in the HM Chief Inspector of Prisons submission to the Health Select Committee Prison Health inquiry (HM Chief Inspector of Prisons, 2018), where the prison regime is restricted, prisoners may choose to prioritise other activities (such as a visit from a family member, or taking a shower) over attending a hospital appointment. This leads to a missed appointment being noted as a refusal to attend. Lastly, reductions in staff numbers have had a knock-on effect on the numbers of escorts available to transfer prisoners to hospital for appointments or A&E attendances (Public Health England, 2016b).

While NHS contracts with prisons tend to specify a number of escorts that should be available per day, the Health Select Committee inquiry heard evidence that prisons were frequently unable to fulfil these contractual obligations because of staff shortages (House of Commons Health and Social Care Committee, 2018).

The drop in emergency admissions of prisoners in December, which was not observed in the general population, may also at least in part reflect challenges around staffing. If staffing levels are reduced over the Christmas holiday period, this may mean fewer officers are physically available to escort prisoners to hospital.

While hospital data alone cannot tell us why fewer prisoners are attending hospital in an emergency during December (and some caution should be exercised in concluding too much from a single year of data), it does suggest

that something different is happening that is changing how secondary care services are used. If, in fact, the drop reflects a reduction in emergencies in December, it is important to understand the reasons for this, to see whether the approach could be replicated across the year to bring about a similar overall reduction in emergency admissions.

We also need to consider what hospital data can add to knowledge concerning pregnant women in prison. We do know that prisons are not equipped to meet the needs of women in labour. For instance, they are not staffed with round-the-clock midwives who are trained to support women in labour, and there is no access to the range of pain relief options that a woman might use if she gave birth in hospital. While qualitative research provides accounts of the experiences of women in prison during pregnancy and birth (Abbott and others, 2020), there are no official figures regarding the number of babies born each year to women in prison. In response to the tragic death of a new-born baby at HMP Bronzefield in 2019, the Ministry of Justice (2018b) reported that 93 women in England and Wales were pregnant in prison during the quarter ending 31 December 2017, but this data is not regularly released. As highlighted in the recent select committee report by the House of Commons and House of Lords Joint Committee on Human Rights (2019), the lack of data means it is challenging to ensure that the right services are available in the right places to give women that require those services appropriate health care.

Why is this important?

Commissioning and delivering health care to the prison population requires a complex set of arrangements at national and local levels. Not only are the circumstances of delivery more complicated, but the needs of the people involved are more complex than those of the general population. It is often stated that health care in prisons has shown improvement since the NHS took over commissioning services in 2006 (Public Health England, 2016b), but our analysis suggests there are potentially worrying gaps in access to secondary care, and personal needs that are not yet well understood.

Although part of the purpose of prison is denying people their freedom, that punishment should not extend to a diminished right to health care

(World Health Organization, 2014). The founding principles of the NHS are that it is free at the point of use and available to all – no exception is made for prisoners.

The principle of equivalence underpins the commissioning and delivery of health care services in prison. In the words of NHS England (n.d.), this means that “the health needs of a population constrained by their circumstances are not compromised and that they receive an equal level of service as that offered to the rest of the population”.

However, despite a commitment to the concept, there is a need for a formally accepted definition of equivalence of care and how achievement of it should be measured (House of Commons Health and Social Care Committee, 2018). In 2018, the Royal College of General Practitioners released a position statement regarding equivalence of care in secure environments, which is acknowledged as a key contribution to a shared understanding of equivalence (HM Government, 2019).

The process of commissioning and delivering health care in prisons requires a number of national stakeholders as well as local authorities and individual providers to act together and share objectives and accountability for outcomes. The inclusion of the Ministry of Justice and the Department of Health and Social Care in the National Partnership Agreement for Prison Healthcare (NPA) has been welcomed as a positive step towards closer working and better alignment – as has co-commissioning between NHS England and individual prisons (House of Commons Health and Social Care Committee, 2018). Given the complexity of arrangements, it is critical that there is clarity of ambition across all actors.

In addition to the moral and legal imperative to provide high-quality health care in prison, there are financial and practical reasons for ensuring adequate access to timely and high-quality health care for this population. At a simple level, cancelled or non-attended outpatient appointments are a missed opportunity for the NHS. Our research found that the value of non-attended appointments by prisoners in 2017/18 where no advanced warning was given

equated to around £2 million for the NHS.⁸ Non-attended appointments are not only a missed opportunity to address the needs of prisoners, but also a missed opportunity to reallocate to other people in need, both in prison and elsewhere.

Delayed access to care and treatment is likely to mean that certain diseases like cancer may be more advanced by the time treatment is underway, leading to longer and more complex treatments, greater suffering and potentially higher costs. Likewise, a failure to proactively manage long-term conditions such as diabetes can result in serious but avoidable complications, such as diabetes with ketoacidosis (DKA). The presence of (sometimes multiple) instances of DKA affecting prisoners reflects the challenges of managing a long-term condition in the prison setting. For example, in prison, not all medication can be held in possession (that is, held by the individual themselves). If people are required to take medication at certain times and this is delayed, there may be implications. Such complications carry a high cost to the NHS and may have a significant impact on the individual and their future health and care needs, both in prison and after release.

Furthermore, many prisoners enter the system with established complex needs that have not previously been diagnosed or recognised, and might play a role in their offending behaviour. Prison, therefore, offers an opportunity to identify issues and conditions, and appropriate early intervention has the potential to break a cycle of reoffending (NHS England, 2016).

What should be done?

Our analysis has provided insight into how the prison population uses hospital services in comparison to the general population. Importantly, it has also raised questions about access to health care services and whether prisoners' needs are being met adequately. Furthermore, it has highlighted gaps in knowledge and understanding about the health care needs and service use

8 The £2 million value estimation is based on the number of missed appointments where no advanced warning was given (13,523), and a nominal value of £160 applied per appointment. The £160 value was chosen based on research by Hallsworth and others (2015).

of this population. Below, we set out a number of recommendations for policy-makers; prisons; health care providers and commissioners; and the research community in order to address the needs of prisoners and the gaps in evidence around this topic.

Improving prisoners' access to hospital care

1 Provide greater transparency over prison escort numbers and review the supply of prison escorts

Ensuring that enough escorts are available to transfer prisoners to hospital is an essential element of improving prisoners' access to health care. Yet our research points to real difficulties for prisons and health care services working together to coordinate and escort prisoners to hospital appointments.

Although individual prisons record data on the number of escort and bedwatches that occur for reporting purposes, there is no publicly available data on the numbers of escorts nationally or, crucially, how escort numbers relate to prisoners' health care needs.

This lack of data makes it impossible to fully understand how the high level of missed hospital appointments among the prison population could be better managed. We therefore suggest that NHS England works with partners across the criminal justice system to publish escort and bedwatch data at a national level, including the number of escorts each prison is set, and how many are achieved.

2 Increase access to outpatients via telemedicine consultations

The lower level of telephone or video outpatient appointments in the prison population (2% compared to 3% in the general population) highlights a clear area where access to hospital care could be improved.

A greater number of telemedicine appointments in prison could improve access to outpatient care in line with the NHS's Long Term Plan (2019), which aims to reduce the number of face-to-face outpatient appointments over the next five years.

In addition, it could reduce the costs to the NHS of escorting prisoners, although it should be noted that access to appointments within prisons can also be affected by escort availability.

Making better use of hospital data

Hospital data is an untapped resource that can be used to learn more about the health and health care use of prisoners, as well as challenges to health care delivery. The ability to interrogate hospital data and identify health service use by specific groups, such as women prisoners, is also important for gaining an understanding of the needs of a diverse population and planning for future health care provision.

1 Collect, collate and publish regular data on prisoners' health care use and how it compares to the general population

The approach used in this research to identify prisoners in hospital data based on their postcode could be applied on a regular basis to report on prisoners' use of hospital services and provide a basis for monitoring changes in use and the impact of policy and practice changes.

By publishing this report and its appendices detailing the particular approach used to identify prisoners' anonymised hospital records using postcode data, we hope that it can be used more widely to establish a regular look at prisoners' use of secondary health care. The postcode approach is not without its limitations – hospital data cannot tell us directly about prisoners' use of health services inside prison, for example, which forms the majority of their contact with health care services. But we believe it gives us the best insight yet into how prisoners are using NHS hospital services.

Moreover, the coverage of postcode-derived data will continue to improve over time given that the Personal Demographics Service (PDS) has now been rolled out across the prison estate. This means that a prisoner's address is now registered as the prison where they are currently located, and that prison addresses are recorded in a standardised way, including postcode. Any comparison of year-on-year changes will need to acknowledge the potential impact of PDS, but this strengthens the case for the approach to be used in future to see how patterns change in terms of how often prisoners use hospital services and the reasons why.

Monitoring the difference between expected and actual use of services by comparing prisoners to the general population is also important for broader discussions over whether prisoners are receiving care that is equivalent to the general population.

2 Identify and monitor avoidable health outcomes for prisoners

Hospital data has the potential to inform our understanding of the challenges of health care delivery in prison and the difficulties of managing a long-term health condition in prison. For instance, we know that there are fewer opportunities for self-care in prison, and therefore determining avoidable health outcomes (such as diabetic ketoacidosis) and using hospital data as a monitoring tool can be a catalyst for considering new ways of condition management.

3 Collect and publish data on pregnant women in prisons

Our analysis of women's use of hospital services in relation to pregnancy and delivery care needs highlights that there is a small group of women for whom health outcomes are unclear, as they do not give birth during the time they are in prison.

Data needs to be collected within prisons on the numbers of women who are pregnant or in the post-natal period. Hospital data can then be used to inform understanding of health outcomes for women and their babies.

The tragic death of a baby in HMP Bronzefield has rightly focused attention on the plight of pregnant prisoners. Our analysis reveals that around one in 10 women who gave birth during their prison stay did so before they reached hospital. Rules regarding the reporting of small numbers, while protecting people's confidentiality, should not be used to avoid learning from poor outcomes or poor-quality care. It is important to advocate for women in prison by placing the burden of responsibility on a delegated authority to keep a record of significant outcomes which point to care provision within prison.

For instance, births taking place inside prison before a woman can be taken to hospital are theoretically possible, but should be a 'never' event. Independent review of such cases, in a similar manner to review of deaths in custody, would be one way to make sure any recurring issues can be identified and changes can be made to the care of pregnant women in prison.

7 Conclusion: preparing for the future

It is evident that there has been progress towards greater alignment of health care policy in prisons in recent years, given the widening out of membership of the National Prisoner Health Board and publication of the National Partnership Agreement. However, there is still work to be done and there is a need for greater clarity over how to measure progress towards shared ambitions, and equivalence of care in particular.

At a time when the government has committed to an additional 10,000 prison places (gov.uk, 2019b), the systems involved need to work within the existing constraints of complex commissioning arrangements in order to enhance health care for prisoners. Services also need to adapt and evolve to meet the changing needs of prisoners – demographic projections suggest the prison population will continue to age and that will bring with it increasing complexity and more challenging care needs. One part of the solution may be better use of technology in order to provide greater access to health care via telemedicine and online consultations.

Greater understanding of the range of health services provided within prisons alongside use of secondary care services could help to identify gaps and opportunities for enhancing support for self-management, wellbeing and health promotion. Ensuring that prisons are sufficiently staffed with people equipped with the skills and training to support health and wellbeing would also help to drive forward the ‘whole prison’ approach to health care as advocated by Public Health England (2016b).

A balance must be struck between setting and achieving ambitions on quality and provision, with a need for individual prisons to tailor their health care provision to meet the needs of their population. Prison affords an opportunity not only to maintain health, but also to improve and proactively manage the health of this complex population.

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