NICE National Institute for Health and Care Excellence

Putting NICE guidance into practice

Resource impact report:
Physical health of people in prison (NG57)

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Summary

This report looks at the resource impact of implementing NICE's guideline on the physical health of people in prison in England.

The guideline should be used in conjunction with other NICE guidelines that may help reduce morbidity and mortality from infectious and communicable diseases in people in prison.

Implementing some of the recommendations in the guideline may require reallocation of resources or new investment to support early interventions and planned management of conditions for people in prison.

These costs are anticipated to be offset by savings from reduced emergency incidents in prison and emergency hospital admissions, and by lower costs associated with late presentations of conditions requiring treatment. The resource impact of implementing these recommendations needs to be considered at a local level. The resource impact of one recommendation can be quantified with a reasonable degree of certainty:

- Carry out a medicines reconciliation (in line with NICE's guideline on medicines optimisation) before the second-stage health assessment (recommendation 1.1.8)

The potential resource impact of implementing this recommendation for the population of England based on the assumptions is shown in table 1.

Table 1 Estimated annual resource impact of implementing the recommendation on medicines reconciliation

	2016/17 (£000s)	2017/18 (£000s)	2018/19 (£000s)	2019/20 (£000s)	2020/21 (£000s)
Annual resource impact	−721	−2,886	−2,886	−2,886	−2,886

Health services for people in prison are commissioned by NHS England. Providers are community healthcare providers and NHS hospital trusts.

1 Introduction

1.1 The guideline offers best practice advice on the physical health of people in prison.

1.2 This report discusses the resource impact of implementing our guideline on physical health of people in prison in England. It aims to help organisations plan for the financial implications of implementing this NICE guideline.

1.3 A resource impact template accompanies this report to help with assessing the resource impact at a local level in England, Wales or Northern Ireland.

1.4 We have considered direct costs and savings to the NHS and not those for the individual, the private sector, the not-for-profit sector or the National Offender Management Service.

1.5 Health services for people in prison are commissioned by NHS England. Providers are community healthcare providers and NHS hospital trusts.

2 Background

2.1 There are 122 public and privately run prisons in England and Wales (at the time of publication - November 2016). Their primary purpose is to detain people who have, or are suspected of having, committed a criminal offence.

2.2 The prison population has increased in recent years in England and Wales and was reported to be 85,930 in March 2016. The Offender Management Statistics Quarterly recorded around 91,000 first receptions of people into the prison system in 2015/16.

2.3 People in prison have a right to equivalence of healthcare, a principle whereby health services for people in prisons are provided to the same standard, quality and specification as for patients in the wider NHS.

2.4 It is assumed that prison healthcare providers are applying other NICE guidelines appropriately to ensure equivalence of care for people in prison.

2.5 Implementing some of the recommendations in the guideline on physical health of people in prison may require reallocation of resources to support early interventions. Organisations that do not already have early interventions in place may incur additional costs. Organisations should assess the resource impact of these recommendations locally.

2.6 One recommendation in this guideline can be quantified with a reasonable degree of certainty. The resource impact of this recommendation is estimated in this report.

3 Significant resource impact recommendations

Screening, health promotion and monitoring

3.1 The following recommendations may have resource impacts where they are not currently in place:

- 1.1.9 to 1.1.31: Second-stage health assessment and additional health screening
- 1.3.1 to 1.3.8: Promoting health and wellbeing
- 1.5.1: Monitoring chronic conditions

3.2 Implementing the above recommendations may require investment of resources to support early interventions and planned management of conditions. Implementing these recommendations is expected to ensure equality of access to healthcare for the prison population, in line with other NICE guidelines and national policy for people in prison.

3.3 It is anticipated that this investment will be offset by savings from reduced emergency incidents and admissions, and by lower costs associated with late presentations of conditions and treatment of infectious and communicable diseases. Overall, implementing

these recommendations is not expected to have a significant resource impact.

3.4 Implementation of the recommendations above should lead to a healthier prison population, with savings from reduced unplanned treatments and late presentation of conditions and reduced morbidity and mortality from infectious and communicable diseases.

Medicines reconciliation

3.5 **Recommendation 1.1.8**: Carry out a medicines reconciliation (in line with NICE's guideline on medicines optimisation) before the second-stage health assessment. See also recommendations 1.4.1 and 1.7.10 for recommendations on risk assessments for in-possession medicines and ensuring continuity of medicine.

Background

3.5.1 Adverse events related to medicines are a considerable burden on the NHS and have a significant impact on patients. Approximately 5% to 8% of all hospital admissions are due to avoidable adverse drug reactions related to medicines.

3.5.2 NICE's guideline on medicines optimisation recommends that medicines reconciliations are carried out to ensure that the combinations of medicines that people are taking are effective. A benefit of medicines reconciliation is the reduced risk of avoidable adverse drug reactions.

Assumptions made

3.5.3 It is assumed that 9% of people in prison will attend NHS hospital trusts as non-elective inpatients, in a year. This is based on the number of people admitted to hospital as non-elective inpatients in 2014/15 (Hospital episode statistics 2014/15, NHS Digital).

3.5.4 It is assumed that the number of people in prison who are admitted to hospital with an avoidable adverse drug reaction is the same as it is in the general population. Around 6.5% of non-elective inpatients in hospital have had adverse drug reactions. It is

assumed that 72% of non-elective inpatient attendances for adverse drug reactions are avoidable. This is based on Pirmohamed M et al., Adverse drug reactions as cause of admission to hospital: prospective analysis of 18 820 patients.

3.5.5 Based on expert opinion it is assumed that 75% of avoidable adverse drug reactions would be prevented by implementing the recommendations in this guideline.

3.5.6 It is assumed that the average inpatient stay for people with adverse drug reactions is 8 days (Pirmohamed et al. 2004).

3.5.7 When people go from prison to hospital, they must be accompanied by prison officers who stay with them for the first 24 hours. If the person needs to stay longer, the escorts will be replaced by 'bed watchers' who will remain with them for the duration of their stay in hospital.

3.5.8 It has been assumed that there will be 2 prison officers with each person attending hospital from prison, while they are in hospital. This is based on information from the National Offender Management Service.

3.5.9 It is assumed that there will be 3 months' uptake of this recommendation in 2016/17, with full uptake from 2017/18 onwards.

3.5.10 If a national tariff price or indicative price exists for an activity, this has been used as the unit cost.

3.5.11 Using these prices ensures that the costs in the report are the cost to NHS England of commissioning predicted changes in activity at the tariff price, but may not represent the actual cost to individual trusts of delivering the activity.

Resource impact

3.5.12 The weighted average cost of healthcare for a person with an adverse drug reaction has been calculated by applying activity from the 2014/15 NHS Reference costs to the 2016/17 NHS National Tariff of poisoning, toxic, environmental and unspecified effects

(WA11V and WA11X) with major and intermediate complications and comorbidities. Three excess bed days have been added to the cost of intermediate complications and comorbidities because the trim point is 5 days. The weighted average cost for an 8-day stay is estimated to be £1,134.

3.5.13 The estimated cost of prison escort and bed watch for 8 days is around £8,850. This is based on the standard cost of prison escorts and bed watchers. Depending on location, there may be increases to this cost.

3.5.14 It is anticipated that prison healthcare teams will be able to carry out medicines reconciliation within current funding arrangements. Services may need to be reorganised to ensure that appropriately skilled staff carry out the medicines reconciliation. Organisations should assess this locally.

3.5.15 The potential resource impact of implementing medicines reconciliation in prisons in England is summarised in table 3.

Table 3 Estimated annual resource impact of medicine reconciliation in England

Costs / -Savings	**Current practice (£000s)**	**2016/17 (£000s)**	**2017/18 (£000s)**	**2018/19 (£000s)**	**2019/20 (£000s)**	**2020/21 (£000s)**
Non-elective inpatient attendances	0	−82	−328	−328	−328	−328
Prison escorts and bed watch	0	−639	−2,558	−2,558	−2,558	−2,558
Incremental cost or saving (-)	**0**	**−721**	**−2,886**	**−2,886**	**−2,886**	**−2,886**
Number of people	**Current practice**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**
Number of people who have avoided adverse drug reactions	0	72	289	289	289	289

Benefits and savings

3.5.16 Implementing medicines reconciliation will reduce avoidable adverse drug events for people in prison. This will reduce the need for hospital attendances and the additional costs associated with moving people from prison.

3.5.17 Implementing medicines reconciliation in prisons in England will reduce avoidable adverse drug events by 289 people a year from 2017/18 onwards.

3.5.18 Reducing avoidable adverse drug events will bring down hospital attendances, saving £328,000 a year in England from 2017/18 onwards. Reduced attendances will also mean reduced spending on prison escorts and bed watch, generating a total incremental saving of £2,886,000 a year from 2017/18.

4 Sensitivity analysis

4.1 The model contains a number of assumptions for which no empirical evidence exists; these assumptions are therefore subject to a degree of uncertainty.

4.2 The sensitivity analysis used appropriate minimum and maximum values of variables to assess which variables had the biggest impact on the net cost or saving. This enables users to identify the significant cost drivers.

4.3 Appendix A contains a table detailing all variables modified.

4.4 The key conclusion is that the resource impact of implementing medicines reconciliation in prisons is very sensitive to the proportion of non-elective inpatient attendances that relate to adverse drug reactions and the number of adverse drug reactions that are avoidable.

4.5 The estimated annual savings if avoidable drug reactions were reduced by 50%, 75% and 100%, would be £1,924,000, £2,886,000 and £3,848,000 respectively.

5 Implications for commissioners

5.1 There are a number of recommendations in the guideline where it may be necessary to invest resources to support early interventions and planned management of conditions for people in prison. This investment may lead to savings from reducing emergency incidents and admissions, unplanned treatments, late presentation of

conditions, and morbidity and mortality from infectious and communicable diseases.

5.2 Implementing the recommendation on medicines reconciliation may generate savings for commissioners by reducing costs related to non-elective attendances and prison escort and bed watching. There may need to be some reallocation of resources within prison healthcare to implement this recommendation.

Appendix A Results of sensitivity analysis

Individual variable sensitivity				Recurrent resource impact				
	Baseline value	Minimum value	Maximum value	Baseline resource impact (£000s)	Minimum resource impact (£000s)	Maximum resource impact (£000s)	Change (£000s)	Sensitivity ratio
Proportion of non-elective admissions related to adverse drug reactions	6.50%	5.50%	7.50%	-2,886	-2,442	-3,330	-888	1.00
Proportion of adverse drug reactions that were potentially avoidable	72.00%	62.00%	82.00%	-2,886	-2,485	-3,287	-802	1.00
Average length of non-elective inpatient attendance for adverse drug reactions (days)	8	7	9	-2,886	-2,576	-3,196	-620	0.86
Future avoidable adverse drug reactions avoided	75%	50%	100%	-2,886	-1,924	-3,848	-1,924	1.00

About this resource impact report

This resource impact report accompanies the NICE guideline on physical health of people in prison and should be read in conjunction with it. See terms and conditions on the NICE website.