Briefing paper: Prison population management considerations in response to COVID-19.

Prepared by: Dr. Éamonn O'Moore, National Lead for Health & Justice and Director UK Collaborating Centre, WHO Health in Prisons Programme (European Region)

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Summary:

- Prisons are high-risk settings for large outbreaks of COVID-19.
- Many people in prisons are in clinically vulnerable groups.
- Risks include excess death rates; need for specialist NHS care at time of great pressure on those resources, and operational pressures for custodial staff.
- Population management approaches include reducing the total prisoner population during the pandemic period and/or selective release of the highly vulnerable prisoner population.
- A specific objective should be to reduce as far as possible all forms of shared accommodation.
- Single cell accommodation has distinct advantages in supporting protective isolation ('shielding') of vulnerable prisoners, enabling isolation of cases, supporting social distancing protocols and allowing more efficient deployment of healthcare and custodial resources.

Background[i]**:** Prisons are epicentres for infectious diseases because of the higher background prevalence of infection, the higher levels of risk factors for infection, the unavoidable close contact in often overcrowded, poorly ventilated, and unsanitary facilities, and the poor access to healthcare services relative to that in community settings[ii].

Infections can be transmitted between prisoners, staff and visitors, between prisons through transfers and staff cross-deployment, and to and from the community. As such, prisons and other custodial settings are an integral part of the public health response to coronavirus disease 2019 (COVID-19).

Prisons concentrate individuals who are susceptible to infection and those with a higher risk of complications. COVID-19 has an increased mortality in older people and in those with chronic diseases or immunosuppression. Notably, multimorbidity is normative among people in prison, often with earlier onset and greater severity than in the general population, and prison populations are ageing in many countries[iii]. At the request of PHE, NHS England/NHS Improvement's Health & Justice Team conducted a search of the prison health informatic database (SystmOne) to identify current prisoners who meet criteria to be considered at higher risk of complications of infection with COVID-19, identified by searching specific 'diagnostic read codes'. This has identified approximately 20,000 individuals who could be classified as being in higher risk groups[iv]. Similar numbers were used by UCL in recent work undertaken to model the potential impact of COVID-19 infections in prisons in England- they estimated 20% of the prison population fall into groups that are at high risk of death if they get COVID. Based on 10% case fatality rate (CFR) in those with comorbidities if infected with COVID 19 and a worst-case scenario of 50% infection rate, they estimated that this would lead to around 800 deaths[v]. However, HMPPS modelling (undertaken with PHE) has indicated the possibility of high numbers of deaths in custody and suggests in the region of 10 times the number that we would normally see, with c. 2,500 – 3,500, based on the reasonable worst-case scenario. Potentially half of these deaths may occur over three weeks at the height of the outbreak.

Mitigation strategies for prisoner populations

Evidence on the impact of respiratory infectious diseases in prisons is limited, with most published papers focusing on tuberculosis (TB)[vi]. One of the first documented influenza outbreaks in prison occurred in San Quentin prison in California, USA, during the 1918 influenza pandemic. In three separate instances, infection was introduced by a newly received prisoner, and a single transfer to another prison resulted in an outbreak there. Isolation was central to containment[vii]. More recently, prison influenza outbreaks have been described in the USA, Canada, Australia, Taiwan, and Thailand[viii], [ix]. These consider strategies to mitigate the impact of outbreaks including isolation and cohorting as well as diagnostic testing, treatment and appropriate use of vaccination to reduce further infection and/or improve clinical outcomes.

PHE have long-standing advice on the prevention and control of infectious diseases[x] and the management of outbreaks in prisons and other prescribed places of detention[xi]. A key strategy is to isolate prisoners known to be or believed to be infected (based on clinical signs/symptoms meeting the case definition and/or diagnostic testing). Where isolation facilities are overwhelmed by numbers of cases/probable cases, advice is to cohort people together. The aim of both strategies is to reduce transmission of infection among the wider population of staff and prisoners as well as enable effective deployment of healthcare and custodial staff. In some situations where the numbers of cases are very high, and/or where there are particularly vulnerable populations, it may be considered useful to 'reverse cohort' people i.e. place them into a part of the facility with high levels of bio-security, enhanced care and segregation from the general population. In addition, a standard response to any outbreak is to reduce 'seeding and feeding' of outbreaks by reducing or eliminating transfers out and new receptions, respectively.

Experience from managing infectious disease outbreaks in prisons, including influenza (which shares many characteristics of COVID-19) tells us that outbreaks are often well-established across an individual prison before the first few cases are recognised and reported. Also, that control measures are compromised by challenges in contact tracing, isolation and cohorting, and management of staff illness (both sickness absence and 'presenteeism'). Finally, that such outbreaks may be 'explosive'- with large numbers of cases right across the prison.

A pandemic poses a specific challenge to the prison estate- the risk of multiple large outbreaks in many prisons concurrently coinciding with significant pressure on NHS specialist healthcare resources in the community. Managing this risk requires consideration of population management in individual establishments as well as across the whole estate.

Previous pandemic flu planning for prisons has recognised the need to consider reductions in the prisoner population during the pandemic period to enable effective infection control but also to maintain the ability of the prison estate to deliver its primary functions. Reductions in staffing (due to illness or undertaking care for family members etc. or impact of social control like household isolation etc.) will mean that maintaining normal regime will be challenging so reducing the number of people requiring care in prisons may be an effective mitigation of this risk also.

Strategies to consider include:

1) **Reducing the prison population generally**: The prison estate in England is currently operating at almost full operational capacity with significant levels of overcrowding, including doubling up in cells normally designed for single occupancy. This creates at least two risks: a) introduction of infection into prisons with consequently large numbers of cases which quickly overwhelm isolation/cohorting facilities as well as healthcare and custodial

resources, and b) large numbers of seriously ill patients requiring specialist NHS care which places significant pressure on the local healthcare system at a time of great need.

Reducing the prisoner population generally has several potential benefits:

a. It would create 'head room' within each individual prison and across the whole estate to enable more effective isolation and cohorting capacity- this will become increasingly important as the pandemic wave escalates the number of cases;
b. It would reduce the need for movement into and across the prison estate, an essential element of infection control during pandemics to avoid 'feeding & seeding' outbreaks;
c. It would enable care (custodial and healthcare) to be more effectively and efficiently delivered.
d. It would allow 'shielding' of very vulnerable patients, creating both isolation and cohorting capacity with enhanced care and bio-security.
e. It would support implementation of social distancing protocols in prisons;
f. It would enable single cell accommodation to be implemented as standard.

A specific objective of such an approach should include ensuring only single-cell accommodation in use throughout the pandemic period. Many prisoners are currently in shared accommodation of some sort in prisons in England (doubles, triples, dormitories, whether certified as crowded or uncrowded). Reducing all multiple occupancy accommodation to single cell occupancy would require a population reduction of around 16,000 prisoners.

2) **Reducing the prisoner population at highest risk of complications of infection**: As mentioned above, risks for complications of COVID-19 include age and/or underlying medical conditions. Estimates currently in use from NHS and academic sources place approximately 20,000 people in this category. These patients are not uniformly distributed across the prison estate. Some prisons will have a very high proportion of people in the higher risk categories whereas other prisons will have very few. Reducing this population appears a reasonable approach to reduce risk of prisoners requiring specialist healthcare as well as risk of mortality. However, many such prisoners have complex social care needs, which may not be met easily in the community. Others may have specific security concerns which restricts the desirability of release. However, there will be cases where the risks of complications from the infection are heightened, and where in general removing them from closed settings would improve the chances of better clinical outcomes. But reducing the prisoner population generally may also protect these vulnerable prisoners specifically by enabling implementation of 'reverse cohorting'/cocooning; enabling isolation and cohorting of cases, and allowing more efficient use of healthcare and custodial resources.

Recommendation:

The progress of the COVID-19 pandemic wave across the UK means that time to intervene in prison populations in a meaningful way is short if we are to gain the advantage we need in terms of isolation and cohorting facilities and enabling social distancing. While it is not possible to predict events accurately, it seems prudent to move quickly to a significant population reduction enabling single cell accommodation across the prison estate in England.

[i] Stuart A Kinner, Jesse T Young, Kathryn Snow, Louise Southalan, Daniel Lopez-Acuña, Carina Ferreira-Borges, Éamonn O'Moore. Prisons and custodial settings are part of a comprehensive response to COVID-19. Lancet Public Health 2020. Published Online March 17, 2020 https://doi.org/10.1016/S2468-2667(20)30058-X

[ii] Dolan K, Wirtz AL, Moazen B, et al. Global burden of HIV, viral hepatitis, and tuberculosis in prisoners and detainees. Lancet 2016; 388: 1089–102.

[iii] Kinner SA, Young JT. Understanding and improving the health of people who experience incarceration: An overview and synthesis. Epidemiol Rev 2018; 40: 4–11.

[iv] Personal communication. NHS England/NHS Improvement to PHE Health & Justice, March 24, 2020.

[v] Personal communication. Professor Andrew Hayward, Director UCL Institute of Epidemiology and Health Care Co-Director UCL Collaborative Centre for Inclusion Health, March 22, 2020.

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

[vii] Stanley LL. Influenza at San Quentin Prison, California. Public Health Rep 1919; 34: 996–1008.

[viii] Besney J, Moreau D, Jacobs A, et al. Influenza outbreak in a Canadian correctional facility. J Infect Prev 2017; 18: 193–98.

[ix] Chao W-C, Liu P-Y, Wu C-L. Control of an H1N1 outbreak in a correctional facility in central Taiwan. J Microbiol Immunol Infect 2017; 50: 175–82.

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[xi] Multi-agency contingency plan for the management of outbreaks of communicable diseases or other health protection incidents in prisons and other places of detention in England , Second Edition- 2017. https://www.gov.uk/government/publications/multi-agency-contingency-plan-for-disease-outbreaks-in-prisons