

Expert Report: Covid-19 and prisons in England and Wales

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Introduction

I have been asked by the Howard League for Penal Reform and the Prison Reform Trust to provide my expert opinion on COVID-19 and prisons in England and Wales.

My qualifications and experience

I am Emeritus Professor of Public Health at The London School of Hygiene and Tropical Medicine (LSHTM). I trained in medicine at St. Mary's Hospital Medical School (now Imperial College London) and qualified in 1984. I gained membership, and subsequently fellowship of the Royal College of Physicians (FRCP) and subsequently was appointed fellow of the Faculty of Public Health RCP (FFPH). In 1997, after having been appointed a consultant physician to St. Mary's Hospital, London, where I was responsible for HIV and tuberculosis care, I expanded my research into communicable diseases and health systems' response to them. Through a Harkness fellowship, I analysed the social causes and response to the epidemic of drug-resistant tuberculosis in New York City. My book (From Chaos to Coercion: detention and the control of tuberculosis) and my Medical Doctorate (MD) resulted from this work. I subsequently moved to LSHTM, gaining a Masters in Public Health (MSc) in 1998, and where I was later appointed professor of Public Health, and Honorary Consultant to Public Health England. I have advised UK Cabinet Office, World Health Organization, World Bank, and many governments around the world. My earlier research addressed the spread of HIV and tuberculosis within the Soviet Union including through prisons and pre-detention trial centres. Over the past 15 years my research has focused on pandemic preparedness drawing upon the following disciplines: medicine, epidemiology, mathematical modelling, sociology, policy analysis. I have published several books, multiple book chapters, and more than 250 peer-reviewed academic papers.

Executive Summary

This pandemic is the most serious public health crisis the world has faced in more than a generation. Case numbers are climbing exponentially around the world. Health systems are going to be stretched close to, or beyond, breaking point. Outbreaks in prisons are already occurring. Time is of the utmost importance. Prevention of outbreaks in prisons will always be easier than control of outbreaks.

Research has shown that real case numbers are far greater in the UK than those that have been documented. At present there are no screening tests that offer high sensitivity to detect individuals with COVID-19. Fatality rates around the world appear to be higher where there is a rapid spread and the breakdown of, or lack of access to, health care services.

Prisons and centres of detention are well-recognised ‘epidemiological pumps’. Now that prisoners and workers within the prison system have developed disease, further exposure to others in the system is almost inevitable. Even where COVID-19 is not present within a prison currently, in the longer term all prisons are very likely to experience outbreaks. Prisons have been subject to considerable ‘churn’ in terms of new prisoners entering the prison each month.

The risk of exposure of COVID-19 to prisoners and staff when new cases enter a prison is far, far greater than the risk to individuals in the wider community. Social distancing and personal infection control measures are, because of their nature, almost impossible in overcrowded settings with sanitation limitations. Overcrowding, unsanitary conditions, poor ventilation in a prison will likely increase the speed with which an epidemic unfolded even if the number of cases cumulatively remained unchanged. Poor access to health care facilities, slow procedures to diagnose, isolate, and treat patients, or quarantine contacts would further reduce the time to peak incidence.

Older people are at greater risk of severe disease and death and I understand the prison population is aging. Moreover, men seem to be twice as likely to die as women when they develop disease. The prison population is 96% male.

Despite the measures taken including the restriction to longer periods to their cells, the limitations on the movements into and between prisons, the challenges in preventing prisoners from becoming exposed are likely almost insurmountable, in my opinion. Effective social

distancing is, in practice, practically impossible in congregate settings in my experience. This challenge becomes even greater once cases of COVID-19 have entered a prison setting. The identification of subsequent cases is almost impossible because of the asymptomatic nature of infection, the incubation period, and the different likely routes of transmission.

There is, it seems to me, an imperative to prevent any prisoners and staff being exposed, reduce the risk of spread from prisoners developing COVID-19 to other prisoners and staff, and ensuring those that do succumb receive medical care in a timely and appropriate manner to reduce suffering and offer them the best chance of survival. Action to address these issues in prisons is needed extremely urgently.

My view, based on the literature and my experience, is that prison should be a last resort only and that the risks posed to prisoners and staff are substantial and profound in terms of their health. Prisoners who need not be incarcerated and who could conduct social distancing in the community under appropriate supervision would, logically, be following the Government's recently published broader guidance on social distancing. Maintaining such people in prison unnecessarily would be counter to that guidance, in my opinion.

In my opinion authorities should consider alternative options to incarceration where feasible that avoids congregate settings, where social distancing and isolation/quarantine are measures that are consistent with the most recent, March 20th 2020 guidelines for others in protecting public health.

Where there is no possibility of removal from incarceration, I would advise that stringent measures should be taken to protect prisoners and staff.

My instructions

My instructions are appended at Annex 1.

Source materials

In formulating my opinion, I draw upon my experience as set out above. I have also relied on peer-reviewed academic papers from medical, epidemiology and public health journals including The Lancet, New England Journal of Medicine, BMC Medicine; Academic Centres' reports such as Imperial College, Johns Hopkins, London School of Hygiene and Tropical Medicine, US National Institutes of Health (NIH); World Health Organization; public health institutions such as Public Health England, US Centers for Disease Control and Prevention, European Centre for Disease Prevention and Control. Sources are referenced within the body of the report where appropriate. I was furnished with a background briefing by The Howard League for Penal Reform and the Prison Reform Trust on 31st March 2020, appended at Annex 2.

The questions asked

1. **What is COVID-19, how is it spread between individuals and what is known about the stage at which transmission peaks?**
 - 1.1 Coronaviruses are a family of viruses which typically affect the respiratory tract of birds and mammals, including humans. Nucleic Acids, of which there are two types, RNA and DNA, are the building blocks of life. RNA viruses have the propensity to mutate more rapidly than DNA viruses and thus human immunity may not be lifelong even after having been infected (or, where possible, vaccinated). Seven coronaviruses are known to cause human disease, four of which are mild: viruses 229E, OC43, NL63 and HKU1. Three of the coronaviruses can have more serious outcomes in people, and those diseases are SARS (severe acute respiratory syndrome) which emerged in late 2002 and disappeared by 2004; MERS (Middle East respiratory syndrome), which emerged in 2012 and remains in circulation in camels. A novel coronavirus, probably arising from bats (similar to SARS-CoV-2 and MERS-CoV) in a wet market, COVID-19, emerged in December 2019 from China. A global effort is under way to contain its spread. COVID-19 is caused by the coronavirus known as SARS-CoV-2.
 - 1.2 Person-to-person spread of SARS-CoV-2 is thought to occur mainly via respiratory droplets, resembling the spread of influenza. With droplet transmission, virus particles released in the respiratory secretions when a person with infection coughs, sneezes, or talks can infect another person if they make direct contact with the mucous membranes. Infection can also occur if a person touches an infected surface and then touches his or her eyes, nose, or mouth. There is evidence that SARS-CoV-2 can be spread by those without symptoms.¹ The virus can remain viable in suspended aerosols up to 3 hours post aerosolization, meaning that spread within congregate settings is a substantial risk. Spread can also occur vertically, from mother to her baby, though not through the intrauterine route.² The faecal-oral route of transmission is potentially important, though less well demonstrated compared to the respiratory route of transmission. This route of transmission has implications in areas with poor sanitation.³ The transmission of SARS-CoV-2 as a fomite, that is, the spread of a virus through an object - door handle, door-bell, respirators, also plays a role in spreading the virus. As with the faecal-oral route, poor sanitation, again, is thus likely to play a part in transmission.⁴ The virus can remain viable on surfaces for days in the absence of appropriate cleaning.⁵
 - 1.3 The transmission dynamics of SARS-CoV-2 remain to be fully determined.⁶ But what seems to be clear is that, viral load and shedding, that is infectious virus, is present in cases who are asymptomatic and pre-symptomatic, that viral shedding is high in the days immediately before symptoms develop, and high in the days after symptoms develop. The viral load falls after a few days but the virus remains detectable for the duration of illness, and may remain detectable beyond. Whether the virus is viable, that is, can be transmitted and cause disease later, after symptoms have subsided, remains unknown at present. In essence, it is very likely that most people with COVID-19 are

¹ <https://jamanetwork.com/journals/jama/article-abstract/2762028>

² [https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(20\)30360-3.pdf](https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(20)30360-3.pdf)

³ [https://www.thelancet.com/journals/langas/article/PIIS2468-1253\(20\)30048-0/fulltext](https://www.thelancet.com/journals/langas/article/PIIS2468-1253(20)30048-0/fulltext)

⁴ <https://www.preprints.org/manuscript/202002.0283/v1>

⁵ <https://www.medrxiv.org/content/10.1101/2020.03.09.20033217v1.full.pdf>

⁶ <https://www.cebm.net/covid-19/sars-cov-2-viral-load-and-the-severity-of-covid-19>

at their most infectious immediately before and after symptoms develop. It has been estimated that 44% of transmission occurs before cases develop symptoms.⁷

2. **What are the symptoms of a person affected by COVID-19, including the symptoms for persons with a mild infection, severe infection, and critical infection? Please explain how the virus affects a person's physiology. What is known about the potential long term health consequences of COVID-19?**
- 2.1 Most cases of COVID-19 are not severe. But many patients with COVID-19 suffer critical illness.^{8 9 10} For example, in a report from the Chinese Center for Disease Control and Prevention that included approximately 44,500 confirmed infections with an estimation of disease severity:¹¹
- 2.2 81 per cent of the sample did not report severe symptoms (this does not mean that the lungs were not affected – we know radiological changes may occur in people who have very few symptoms).
- 2.3 Severe disease (eg, with dyspnoea [shortness of breath], hypoxia [low oxygen levels in the blood], or >50 percent lung involvement on imaging within 24 to 48 hours) was reported in 14 percent. In my clinical experience, a patient would feel like they were drowning.
- 2.4 Critical disease (eg, with respiratory failure [that is breathing difficulties so severe it results in low oxygen and high carbon dioxide levels in the blood], shock [blood pressure so low that the perfusion of organs by blood begins to fail], or multiorgan dysfunction) was reported in 5 percent. In my experience, patients with critical disease are likely be unconscious or semi-conscious.
- 2.5 The overall case fatality rate was 2.3 percent; no deaths were reported among noncritical cases.
- 2.6 No deaths occurred in the group aged 9 years and younger, but cases in those aged 70 to 79 years had an 8.0% case fatality rate (CFR) and cases in those aged 80 years and older had a 14.8% CFR.
- 2.7 CFR was elevated among those with pre-existing comorbidities; 10.5% for cardiovascular disease; 7.3% for diabetes; 6.3% for chronic respiratory disease; 6.0% for hypertension; and 5.6% for cancer.
- 2.8 The most common symptoms displayed by COVID-19 on admission to hospital are fever and cough, followed by sputum production and fatigue, and dyspnoea (shortness of breath). Less common symptoms include myalgia (muscle aches), fatigue, diarrhoea,

⁷ <https://www.medrxiv.org/content/10.1101/2020.03.15.20036707v2.full.pdf>

⁸ <https://www.ncbi.nlm.nih.gov/pubmed?term=31986261>

⁹ <https://www.ncbi.nlm.nih.gov/pubmed?term=32053579>

¹⁰ <https://www.ncbi.nlm.nih.gov/pubmed?term=31986264>

¹¹ <https://jamanetwork.com/journals/jama/fullarticle/2762130>

and nausea and vomiting.¹² The time from illness onset to discharge from hospital or death averaged, in the large Wuhan cohort studied, about 20 days.

- 2.9 According to a joint World Health Organization (WHO)-China fact-finding mission, the CFR ranged from 5.8 percent in Wuhan to 0.7 percent in the rest of China.¹³ Considerable uncertainty, however, remains around estimates of case fatality rate and they may vary considerably by context. Some estimates suggest a CFR for COVID-19 of about 0.3–1%, which is higher than the order of 0.1% CFR for a moderate influenza A season.¹⁴ Estimates of up to 12% have been reported, probably associated with early rapid spread and the breakdown of, or lack of access to, health care services.¹⁵
- 2.10 Severe disease necessitating hospital admission is associated with comorbidity, with hypertension being the most common, followed by diabetes, and coronary heart disease, chronic obstructive airways diseases (this refers to chronic asthma, chronic bronchitis, and emphysema), carcinoma (cancer), and chronic kidney disease. Other comorbidities are also associated with severe disease and death but, presumably because the prevalence of these diseases in the population is low, the statistical association with specific diseases is lost in the epidemiological ‘noise’.¹⁶
- 2.11 Most of the fatal cases have occurred in patients with advanced age or underlying medical comorbidities.¹⁷ Accepting the probability of bias, death rates in those over 80 years of age may be more than 20%, and those under 50 years old orders of magnitude at less risk, in the region of 0.2–1.0%. The background prevalence of hypertension in China is about 23%.¹⁸ In patients with severe COVID-19, the prevalence of hypertension was 30%. COVID-19 patients with hypertension are around twice as likely to die. The reasons for this are unclear. Hypertension is seldom a risk factor for death with other infectious diseases. One plausible explanation is that the association is not so much with hypertension, but an association with a family of drugs used to treat hypertension, angiotensin converting enzyme inhibitors (ACE inhibitors).¹⁹ It has been proposed that these drugs facilitate viral entry into cells. Angiotensin converting enzyme 2 (ACE2) cell receptors have been shown to be the entry point into human cells for some coronaviruses, including SARS-CoV-2. ACE2 has direct effects on cardiac function and is expressed predominantly in cells lining blood vessels of the heart and kidneys. This may have implications for long-term function of these organs but this is conjecture. The long-term effects of infection of these tissues remains unknown at present.
- 2.12 Diabetes increases the risk of death from COVID-19 patients with severe disease about two-fold. Coronary heart disease may be associated with a much higher risk of death, in the order of 20 times. Though the order of magnitude of effect is robust, the precision of the estimate should be treated with caution. The reason for this is that the prevalence of coronary heart disease is much lower than hypertension and diabetes. Similarly, though the risk of death arising between COVID-19 and chronic obstructive airways

¹² [https://www.thelancet.com/journals/lanct/article/PIIS0140-6736\(20\)30566-3/fulltext#seccestitle150](https://www.thelancet.com/journals/lanct/article/PIIS0140-6736(20)30566-3/fulltext#seccestitle150)

¹³ <https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf>

¹⁴ <https://www.thelancet.com/action/showPdf?pii=S0140-6736%2820%2930567-5>

¹⁵ https://wwwnc.cdc.gov/eid/article/26/6/20-0233_article

¹⁶ <https://www.thelancet.com/action/showPdf?pii=S0140-6736%2820%2930566-3>

¹⁷ <https://www.thelancet.com/action/showPdf?pii=S0140-6736%2820%2930566-3>

¹⁸ <https://www.ahajournals.org/doi/abs/10.1161/CIRCULATIONAHA.117.032380>

¹⁹ [https://www.thelancet.com/journals/lanres/article/PIIS2213-2600\(20\)30116-8/fulltext](https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(20)30116-8/fulltext)

disease is very high (in the order of a seven-fold increased risk), the precision around this number is limited.

- 2.13 The long-term clinical sequelae following COVID-19 remain uncertain given the emergence of the disease is so recent. There are anecdotal reports of residual lung fibrosis after severe pneumonia and, presumably, impaired lung function.
- 2.14 The pathophysiological mechanisms that result in pneumonia, the most common clinical consequence of COVID-19, are especially complicated.²⁰ The evidence so far suggests that the virus is capable of producing an excessive immune reaction in patients. In some cases, a reaction takes place which as a whole is labelled a 'cytokine storm', a response similar to that frequently reported in the 1918 pandemic of Spanish influenza. The effect is extensive tissue damage. A variety of inflammatory messengers (cytokines) and inflammatory cells (white blood cells) react together to stimulate an 'excessive' immune reaction that results in cells 'leaking' and fluid filling the lungs.
- 2.15 The long-term clinical sequelae following COVID-19 remain uncertain given the emergence of the disease is so recent. There are anecdotal reports of residual lung fibrosis after severe pneumonia and, presumably, impaired lung function.

3. **How long may a person who has contracted COVID-19 be asymptomatic? What is known about the risks of transmission of asymptomatic individuals?**

- 3.1 The incubation period of an infectious disease is the time interval between the exposure to a disease-causing infectious agent and the onset of symptomatic (clinical) disease. Knowledge of the incubation period of infectious diseases is crucial to our epidemiological understanding and the design of appropriate prevention and control policies. The incubation period of a disease can be very variable among individuals and a single number, such as the mean or median incubation period, does not reveal the significant heterogeneity in incubation periods in a population. Estimating the distribution of incubation periods is important for a multitude of reasons including modelling the current and future scope of epidemics and evaluating disease control strategies. Critical to understanding the impact of incubation periods and the progress of an epidemic (or pandemic) is whether or not an infected person is contagious (i.e. is shedding virus) during the incubation period. This depends on the virus. For example, Ebola virus infected patients do not pass the virus on to others during the incubation period.
- 3.2 These transmission parameters reported early from Wuhan probably declined somewhat during the early weeks of the outbreak in Wuhan as social distancing measures were adopted,²¹ but still offer important insights into the transmission dynamics of the virus.
- 3.3 The incubation period for COVID-19 is about 5–6 days, varying from 2 to 14 days. Outliers up to 27 days have been reported.

²⁰ <https://www.ncbi.nlm.nih.gov/books/NBK554776/>

²¹ [https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(20\)30073-6/fulltext](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(20)30073-6/fulltext)

- 3.4 As noted in paragraph 1.3 the potential transmission from cases that are asymptomatic, determined largely by studies of viral load in the nasopharynx, seems to increase towards the time cases become symptomatic.
- 3.5 Epidemiological and virological analyses suggest there might be considerable asymptomatic (or presymptomatic) infectiousness. Viral shedding, and so presumed infectiousness, appear to be high soon after symptom onset compared with later in the illness.²² This raises the possibility that transmission might be more likely in the later stages of the incubation period and the earlier stages of the disease. In my view the critical time period of peak transmission is likely to be around this time. Transmission of SARS-CoV-2 from asymptomatic individuals (or individuals within the incubation period) has also been described. In one study, peak viremia seems to be at the end of the incubation period, pointing to the possibility that viremia might be high enough to trigger transmission for 1–2 days before onset of symptoms.²³ However, the full extent to which this occurs is unclear. Mathematical models suggest that, the greater transmission from asymptomatic persons, the higher the R0 and the greater the challenge of containing or mitigating the disease spread.
- 3.6 An important uncertainty is whether there are a large number of asymptomatic cases of COVID-19. Estimates suggest that about 80% of people with COVID-19 have mild or asymptomatic disease, 14% have severe disease, and 6% are critically ill, implying that symptom-based control (or screening before entry to unexposed communities) is unlikely to be effective.
- 3.7 Important questions remain around whether patients can become re-infected, what the implications for disease and further transmission are, and what immunity to SARS-CoV-2 exists, and if it does what the duration is.
- 3.8 The speed of the initial spread of the epidemic, its **doubling time** (that is the time it takes for twice the population that is already infected to become infected), or the related serial interval (the mean time it takes for an infected person to pass on the infection to others), and the likely duration of the epidemic are determined by factors such as the length of time from infection to when a person is infectious to others and the mean duration of infectiousness. For COVID-19, the doubling time is estimated at 4·4–7·5 days.

4. **Please explain the accuracy of tests administered to screen people for COVID-19?**

- 4.1 To date the identification of individuals with COVID-19, is dependent upon a history of exposure (whether through travel where the incidence or prevalence of disease is high, or a history of contact with a person infected), an approach using clinical evaluation (an assessment of symptoms, a screening of signs such as fever), or a diagnostic test such a polymerase chain reaction (PCR). No antibody tests, which would traditionally offer a sensitive and specific approach to screening and diagnosis are yet available.

²² <https://www.medrxiv.org/content/10.1101/2020.03.15.20036707v2>

²³ [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30232-2/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30232-2/fulltext)

- 4.2 Briefly, one concept needs to be understood when considering any screening test. I say briefly because the literature on screening is lengthy and in the UK there are highly defined criteria for the introduction of screening tests systematically. These are not considered here because the purpose of screening generally is not applicable, on the assumption that the intention of ‘screening’ here is to detect cases of COVID-19 before they are introduced to, what is assumed to be, an immunologically naïve population in a secure setting.
- 4.3 Under these circumstances we are aiming to detect cases with accuracy before they are introduced. The sensitivity of a screening tool is vitally important. The sensitivity of a test (also called the true positive rate) is defined as the proportion of people with the disease who will have a positive result. In other words, a highly sensitive test is one that correctly identifies patients with a disease. Less important under my assumption is a screening tool’s specificity, which is the ability of the test to correctly identify those without the disease (true negative rate).
- 4.4 So, what is the sensitivity of each approach to screening entrants to a prison likely to be? That is, is it likely that entrants with infection will enter having disease that has been undetected?

History of exposure

- 4.5 The number of cases being reported is increasing exponentially, and the number of countries reporting cases is changing daily. One month ago, Wuhan, China was the centre of an epidemic. Today case numbers and deaths reported daily (and per capita) from European countries are higher than Wuhan or anywhere in China. South Korea and Iran have reported very substantial numbers of cases. By next week it seems likely France, Spain and the UK will be reporting very substantial numbers of cases. Thus, travel history is currently, and likely in the future, will become, a very poor guide to exposure and infection. The lag between infection and infectiousness also challenges screening through this method. We are witnessing cases now that became infected several days ago. Moreover, diagnostic capacity varies in countries meaning absolute numbers of cases reported do not reflect the real incidence of infection.
- 4.6 Almost all countries are reporting domestic community chains of transmission. And with transmission from asymptomatic and mildly symptomatic cases being widespread, the value of identifying contact with cases becomes less sensitive as a screening tool. This problem is compounded where diagnostic tests have been in limited supply.

Clinical evaluation

- 4.7 Symptoms are a poor predictor of COVID-19. Patients with seasonal influenza (which is prevalent in northern hemisphere currently) and the common cold express the same symptoms. Patients with pneumonia from a whole variety of causes also present with similar symptoms.
- 4.8 Signs such as fever also show very low sensitivity. To re-iterate, persons with COVID-19 can transmit virus when they are asymptomatic. Moreover, antipyretics such as paracetamol can mask such signs.

Diagnostic test

- 4.9 The gold standard screening test in the diagnosis of COVID-19 is Reverse Transcription Polymerase Chain Reaction (RT-PCR). Even in excellent laboratories this test can be challenging to operationalise, witness the challenges US CDC have had. The sensitivity of RT-PCR varies depending on the quality of the laboratory conducting the test, the severity of disease, where the sample is taken from (SARS-CoV-2 has a predilection for the lower respiratory tract; most samples are taken from the upper respiratory tract), whether the test is performed once or twice, and whether the test is combined with other diagnostic tools. A study from China, which is probably broadly representative of well-functioning laboratories, concluded that the sensitivity of a single pharyngeal swab subjected to RT-PCR had a 78% sensitivity in hospitalised patients.²⁴ Thus, 20% of cases later shown to have COVID-19, were negative on their first pharyngeal swab. And these patients were hospitalised, and presumably had a high viraemic relative to asymptomatic and relatively well cases. (Conducting a second swab increased the sensitivity to 86%, and a combination of chest CT scan with RT-PCR resulted in a sensitivity of 92%). The sensitivity of such screening tests in the asymptomatic population is unknown but likely lower.
- 4.10 In summary, there are no screening tests that offer high sensitivity to detect individuals with COVID-19. This situation may change if new screening tools are developed.
5. **What underlying conditions (including age and pre-existing health conditions) may increase the risk of an individual:**
- (a) **contracting COVID-19;**
 - (b) **suffering severe symptoms;**
 - (c) **dying?**

Please also consider the list of persons identified by Public Health England as being particularly vulnerable to COVID-19 (available at <https://www.gov.uk/government/publications/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19>). Are there any other health conditions which you consider place people at increased risk of severe illness upon contracting COVID-19?

- 5.1 I have previously addressed, under paragraph 2, what is known about the current rate of (i) infection, (ii) suffering severe symptoms, and (iii) mortality within the community. Beyond the co-morbidities reportedly associated with high morbidity and mortality, most notably from China and Italy, such as hypertension, ischaemic heart disease and diabetes, Public Health England has also identified people who, they believe, are ‘extremely vulnerable’. These include solid organ transplant recipients, people with specific named cancers, some rare diseases such as inborn errors of metabolism, people who are on immunosuppressant therapies, and pregnant women with significant heart disease. The combination of co-morbidities drawn from experience in China, Italy, and now emerging from the US and elsewhere suggests to me that the PHE’s identification of ‘extremely vulnerable’ people seems wise. In my

²⁴ <https://www.medrxiv.org/content/10.1101/2020.02.25.20027755v2.full.pdf>

opinion it would be sensible for PHE to publish a complete list of all the co-morbidities that they consider to contribute to increased vulnerability.

6. What is the current rate of:

- (a) **infection;**
- (b) **suffering severe symptoms; and**
- (c) **mortality,**

within the community.

6.1 The WHO's situation report dated 31st March 2020 shows that the UK to date has 22,145 confirmed cases, with 2,619 new cases, and 1408 deaths. The pandemic is following the same epidemiological trajectory as Italy, and is in an exponential growth curve. It is important to remember these cases are known. The underlying real epidemic, that is those who have been or are now, infected and thus includes undiagnosed cases is very likely to be orders of magnitude higher. Thus, the true rate of infection is unknown but substantial and will grow in coming days and weeks. Modellers have estimated that, in the UK around only 7% of symptomatic cases have been identified through testing.²⁵ If this is approximately true, then the UK has perhaps 300,000 cases of symptomatic COVID-19 currently. Estimates currently are that 20% of cases will develop severe disease, then of these 300,000 cases of COVID-19 then we can assume that 60,000 will have or will develop severe disease, and, with a plausible case fatality rate of 2%, then 6,000 of these 300,000 will die. This estimate does not, however, take into account any lag between infections, development of symptoms, the progression to severe disease, and death. These lags are extremely important in making any estimates of the consequences of infection.

7. What is currently known about the risk COVID-19 may pose to those who do not have underlying health conditions, including younger people? Please explain the risks to such persons of suffering symptoms which may require hospitalisation, upon contracting COVID-19.

7.1 I have reported under 2) on death rates by age and with specific co-morbidities. Reporting on the outcomes of 3,200 Italian patients with COVID-19, researchers also highlighted the risk of death from 0, 1, 2 or 3 co-morbidities.²⁶ Mortality, respectively was 1.2%, 23.5%, 26.6%, 48.6%. In the US, a recent report of outcomes among patients with COVID-19 in the United States indicates that fatality was highest in persons aged ≥ 85 , ranging from 10% to 27%, followed by 3% to 11% among persons aged 65–84 years, 1% to 3% among persons aged 55–64 years, <1% among persons aged 20–54 years, and no fatalities among persons aged ≤ 19 years.²⁷ Anecdotal of children dying

²⁵ https://cmmid.github.io/topics/covid19/severity/global_cfr_estimates.html

²⁶ https://www.epicentro.iss.it/coronavirus/bollettino/Report-COVID-2019_20_marzo_eng.pdf

²⁷ <https://www.cdc.gov/mmwr/volumes/69/wr/mm6912e2.htm>

from the disease, have, however been reported and will likely become more familiar as the pandemic progresses.²⁸

- 7.2 To date, no multivariable analyses that determine the relative risk of death and co-morbidities have been conducted, to my knowledge, that offer statistical insights in to the clinical outcomes of variables that include age, sex, and co-morbidities. However, evidence from China and Italy (and increasingly from elsewhere) suggests that men are twice as likely to die.
- 7.3 Evidence to date suggests that 15-20% of symptomatic cases of COVID-19 will require hospitalisation. Amongst those who die, the median time from onset of symptoms to hospital admission, in one recent study from China, was 10 days. Patients who recovered tended to be admitted early. It is unclear if early admission favours causally improved survival. After admission to hospital, patients can deteriorate quickly, the median time from admission to death being only 5 days in this study.²⁹
- 7.4 Progression to severe disease necessitating support in critical care facilities or intensive care facilities (including ventilation) occurs in a substantial minority of patients and, amongst those requiring ventilation, survival rates are low, and have been reported as very low indeed.³⁰

COVID-19 in prisons in England and Wales

8. What is the likelihood of COVID-19 entering all prisons in England and Wales?

- 8.1 Person-to-person spread of SARS-CoV-2 is thought to occur mainly via respiratory droplets, resembling the spread of influenza. With droplet transmission, virus released in the respiratory secretions when a person with infection coughs, sneezes, or talks can infect another person if it makes direct contact with the mucous membranes. Infection can also occur if a person touches an infected surface and then touches his or her eyes, nose, or mouth. There is evidence that SARS-CoV-2 can be spread by those without symptoms, an important challenge to the public health control of this disease.
- 8.2 Several recent reports offer insights into spread confined spaces. Pertinent to this report, three situations offer insights.
- 8.3 First, transmission was widespread on the “Diamond Princess” over a short period of time, presumably at least in large part, through aerosolised transmission.
- 8.4 Second, a cluster of COVID-19 cases has been reported that is associated with a shopping mall of 8 above-ground floors in Wenshou, China. Analysis strongly suggests that indirect transmission of SARS-CoV-2 occurred, almost certainly whilst the index case was asymptomatic during a lengthy incubation period of 28 days before developing a brief fever. Whilst asymptomatic, data suggest that transmission of SARS-CoV-2 to a significant number of people was linked to this 30-year old woman. The transmission in Wenshou happened at a time before widespread transmission outside

²⁸ <https://www.theguardian.com/world/2020/mar/31/boy-13-die-london-after-testing-positive-for-coronavirus>

²⁹ <https://www.bmj.com/content/368/bmj.m1091>

³⁰ [https://www.thelancet.com/journals/lanres/article/PIIS2213-2600\(20\)30079-5/fulltext](https://www.thelancet.com/journals/lanres/article/PIIS2213-2600(20)30079-5/fulltext)

Wuhan, the epicentre of the pandemic, was occurring. COVID-19 was diagnosed in 10 mall customers, 7 staff sharing the same office space as the index case, 6 staff working on different floors (sharing bathroom/toile facilities and elevators), and 11 related people outside the mall, a total of 34 COVID-19 cases. Transmission seems to have resulted from virus contamination of common objects (fomites), virus aerosolization, or spread from other asymptomatic infected persons.³¹ Viral shedding, and so presumed infectiousness, appears to be high soon after symptom onset compared with later in the illness. This raises the possibility that transmission might be more likely in the earlier stage of infection, but additional data are needed to confirm this hypothesis. Transmission of SARS-CoV-2 from asymptomatic individuals (or individuals within the incubation period) has also been described.

- 8.5 Third, what is the experience in prisons. Several outbreaks of COVID-19 in prisons have been reported in recent days as the incidence of disease in the wider population has increased, for example, the US, the UK, and China. Prisons have been, and continue to be, a flashpoint in many countries' battles against the virus. With a prison population in the UK of 83,000, provisional estimates from epidemiologists at University College London suggest that uncontrolled outbreaks of COVID-19 could lead to the deaths of up to 800 people from the prison population.³² New cases of COVID-19 are being reported daily in British prisons, and at least one prisoner has died as a consequence. As of Monday 30 March 2020, in England and Wales, 65 prisoners have tested positive for COVID-19 across 23 prisons; 14 prison staff have tested positive for COVID-19 across 8 prisons and four Prisoner Escort and Custody Services (PECS) staff have tested positive for COVID-19. Two prisoners have died of COVID-19. Thus, recent weeks have seen an exponential growth known cases of COVID-19 in the prison system.
- 8.6 The risk of an index case entering a prison, and thus **exposing** others, is dependent on the characteristics of both the individual and their likely exposure and infection. As the pandemic evolves worldwide the risks of any individual in the wider community increase. With prisoners and others within the prison system having developed disease, further exposure to others in the system is almost inevitable.
- 8.7 It is important to understand that both undocumented cases of symptomatic (perhaps mild) COVID-19 and asymptomatic (and/or pre-symptomatic) cases of COVID-19 represent critically important opportunities for visitors, employees and transferred 'new' prisoners, or existing prisoners, to expose other existing prisoners. Research has shown that real case numbers are far greater in the UK than those that have been documented. The risk of exposure rises markedly when other inmates in the prison, and especially in close proximity such as sharing a wing or cell, have COVID-19 and prisoners with COVID-19 pose a profound risk in exposing others to infection in the short term.
- 8.8 In summary, the risk of exposure of inmates to COVID-19 when new cases enter a prison is far, far greater than the risk to individuals in the wider community. Social distancing and personal infection control measures are, because of their nature, almost impossible in overcrowded settings with sanitation limitations.

³¹ https://wwwnc.cdc.gov/eid/article/26/6/20-0412_article

³² <https://www.theguardian.com/uk-news/2020/mar/21/prisons-could-see-800-deaths-from-coronavirus-without-protective-measures>

8.9 Even where COVID-19 is not present within a prison currently, in the longer term all prisons are very likely to experience outbreaks. Prisons have been subject to considerable ‘churn’ in terms of new prisoners entering the prison each month. As the incidence of infection climbs in the wider community, so too this risk to inmates of being exposed to COVID-19 in prisons increases. The potential for introduction of COVID-19 is not limited to only the wider community, but to the prevalence of COVID-19 in ‘new’ prisoners (whether symptomatic or asymptomatic) entering the prison and initiating a chain of transmission, to visitors (friends, relatives, lawyers, etc.) and prison employees.

9. **What is the likely rate of:**

- (a) **infection;**
- (b) **suffering severe symptoms; and**
- (c) **mortality,**

within a prison setting compared to the community? Does the security category of the prison affect this?

9.1 Let us first assume a prison setting where no COVID-19 case has yet to enter. Assuming a prison holds a population of immunologically naïve individuals and an index case enters the prison with COVID-19 who transmits the virus usually, then we may expect an uninterrupted chain of transmission and a traditional, natural, epidemic curve to emerge. The chance of a COVID-19 case exposing a population obviously increases the more people a closed population is exposed to. If a prison has multiple visitors, short-term prisoners, and numerous staff, all of whom have varying risks of infection reflecting their wider, outside exposure, then the risk of introduction increases substantially. Closed communities with no exposure are, in essence, quarantine centres. Prisons are clearly not. An unfolding COVID-19 epidemic in a prison would, in a grim sense, represent a natural experiment unless highly effective containment measures were taken. To date, wherever COVID-19 has emerged, mitigation steps such as isolation of cases, quarantine of contacts, and social distancing measures have been implemented to curtail chains of transmission. Overcrowding, unsanitary conditions, poor ventilation in a prison will likely increase the speed with which an epidemic unfolded even if the number of cases cumulatively remained unchanged. Poor access to health care facilities, slow procedures to diagnose, isolate, and treat patients, or quarantine contacts would further reduce the time to peak incidence. We have seen the explosive transmission of COVID-19 in congregate settings like cruise ships. Hours matter if transmission is to be stopped. Without timely and effective containment steps, a prison would result in transmission and climbing of cases until a peak was reached in terms of new cases occurring on a daily basis.

9.2 Estimates suggest that about 80% of people with COVID-19 have mild or asymptomatic disease, 14% have severe disease, and 6% are critically ill. I assume, as in the wider community, the clinical consequences of infection with SARS-CoV-2 will be similar irrespective of the setting. What is likely to differ, depending upon environment, as noted above, is the risk of exposure. We know, COVID-19 has already

entered the prison system. Rates of infection are likely to increase, both through further introduction to the system from outside, and from ongoing spread through an outbreak within the confines of the prison. The rate of infection will be dependent upon the conditions, which I address in paragraph 10. Suffice it to say that it will be substantial.

- 9.3 The risk of prisoners suffering from severe disease is dependent upon a) the underlying risk factors such as age, sex and co-morbidities, and b) their timely access to appropriate health care facilities.
- 9.4 I am advised that the prison population is ageing, and has been doing so for over a decade. As of March 2019, of the prison population of 82,000, 10% were between 50 and 59 years old, and 6% were older than 60. As noted, older prisoners are at greater risk of severe disease and death. Moreover, men seem to be twice as likely to die as women when they develop disease. The prison population is 96% male. I am unable to determine further the risk of severe disease and death to prisoners because I do not have data on the prevalence of co-morbidities known to be associated with poor COVID-19 outcomes.
- 9.5 Prisoners at risk of COVID-19 should, in my opinion, have access to diagnostic facilities that include haematology, biochemistry and virology laboratory services, and radiology services that include chest X-ray and CT scan capabilities. Therapeutic support for cases should include, at a minimum, appropriate pharmaceuticals and respiratory support. The full complement of support, including ventilation, available in intensive care units may well be needed for severe cases. Access to these services should be timely.
- 9.6 The security level of a facility, from what I understand, is likely to affect a) exposure to infection; b) risk of death if COVID-19 develops.
- 9.7 The risk of exposure to infection is associated with the different forms of transmission. Overcrowding, several inmates in close proximity in a cell, and dormitories, all increase the risk of infection should an asymptomatic, pre-symptomatic or symptomatic COVID-19 case be present. Proximity is very important in droplet or aerosolised transmission. The risk of transmission through fomites increases where sanitation is poor. Thus, low security settings, that may include dormitories pose a substantial risk if a case enters. Locked up cells with 2 or 3 prisoners spending long periods together in a confined space increases the risk too. Limited access to soap, shared toilets and showers, inadequate cleaning regimens, and/or limited access to running water all increase the risk of transmission. These conditions will vary across security levels.
- 9.8 The risk of death should COVID-19 develop may be dependent on timely access to appropriate health care support. This, I understand, may vary across prison security levels.
10. **Please explain whether the conditions in prisons described in the enclosed briefing may increase the risk of a widespread outbreak of COVID-19. Please explain whether any other factors may increase the likely infection rate in a prison.**
- 10.1 As noted under paragraph 9, the conditions in prisons outlined in the background document I was provided, in my opinion are associated with a) an increased risk of

exposure to SARS-CoV-2, an increased risk of infection through increased transmission, and an increased risk of serious disease progression.

- 10.2 As noted, an increased exposure risk is occurring because many prisoners, many prison staff, and across many prisons already have documented COVID-19. Furthermore, I would be surprised if many more prisoners are not incubating the disease and exposing more inmates. Historically, very large numbers of prisoners have entered and left the prison system. For example, I am advised that more than 73,000 prisoners entered the system in the 12 months to September 2019, and 64,000 prisoners were released during this period. And that between July and September 2019, 6,608 people entered prison to serve sentences of 6 months or less. There has, therefore, been a history of considerable 'churn'. This 'churn', from the perspective of an infectious disease, is compounded by prison visitors, prison staff etc. whilst this 'churn' is now being limited, movements of people, whether prisoners or staff or visitors is inevitable. And screening is ineffective.
- 10.3 Thus, despite the measures taken including the restriction to longer periods to their cells, the limitations on the movements into and between prisons, the challenges in preventing prisoners from becoming exposed are likely almost insurmountable, in my opinion. Effective social distancing is, in practice, practically impossible in congregate settings in my experience. This challenge becomes even greater once cases of COVID-19 have entered a prison setting. The identification of subsequent cases is almost impossible because of the asymptomatic nature of infection, the incubation period, and the different likely routes of transmission.
- 10.4 One particular concern I have is that surrounding the notion of 'cohorting', that is, measures to house prisoners together if they are determined to be disease free, potentially exposed (and thus quarantined), or have symptoms. With diagnostic screening tests so lacking in precision, infection and transmission originating in asymptomatic cases, and diagnostic tests so limited in scope, sensitivity and accessibility, the determination with any accuracy of these 'cohorts' is likely to be of almost no benefit in controlling outbreaks in prisons.
11. **What practical measures would be necessary within a prison to (i) minimise the risk of individuals who are currently detained contracting COVID-19; (ii) properly isolate and contain COVID-19 where an individual (or individuals) has contracted the virus?**
- 11.1 My view, based on the literature and my experience, is that prison should be a last resort only and that the risks posed to prisoners and staff are substantial and profound in terms of their health. Preventing entry into prison settings of COVID-19 is going to be extremely challenging, if not impossible. Control of an outbreak may, also, be all but impossible. Preventing transmission through social distancing or isolation in a prison-setting is probably not possible if it is to be implemented in a non-punitive manner. Prisoners who need not be incarcerated and who could conduct social distancing in the community under appropriate supervision would, logically, be following the Government's recently published broader guidance on social distancing.
- 11.2 Maintaining such people in prison unnecessarily would be counter to that guidance, in my opinion. It would also be counter to the profound changes to people's lives that this

pandemic necessitates, as articulated by the Prime Minister as he stepped up the Government's strategy to 'suppress' the virus rather than 'mitigate'. This shift in position drew upon the Scientific Advisory Group for Emergencies (SAGE) consensus on behavioural and social interventions published 16th March 2020.

11.3 In my opinion authorities should consider alternative options to incarceration where feasible that avoid congregate settings, where social distancing and isolation/quarantine are measures that are consistent with the most recent, March 20th 2020 guidelines for others in protecting public health.

11.4 Where there is no possibility of removal from incarceration, I would advise the following measures be taken:

(a) Reduce risk of exposure

To reduce the risk of prisoners being exposed to a case of COVID-19:

- (i) Ensure any prisoner with symptoms suggestive of COVID-19 receives urgent medical attention, and isolation until determined to be free of the disease. It is critically important to ensure people already detained do not have COVID-19 and thus expose others who are immunologically naïve.
- (ii) Reduce the number and frequency of transfers to the prison, reduce the number of visitors, and reduce the changeover of staff.
- (iii) Reduce the sharing of cells and bathroom facilities.

(b) Properly isolate and contain COVID-19 if an individual (or individuals) contract the virus

To contain COVID-19 where several cases have been reported:

- (i) When a case of COVID-19 enters the prison they should be isolated effectively, their contacts in the prison be quarantined immediately.
- (ii) The case should receive immediate care, and those charged with his/her care should be trained in the use of personal protective equipment (PPE), such as fitting of masks, gloves, gowns, and eye protection.
- (iii) Those charged with looking after contacts who have been quarantined should also be trained in the use of PPE.
- (iv) Poor ventilation and unsanitary conditions facilitate the spread of the virus. Such conditions should be improved if they exist.
- (v) All areas that prisoners share should be cleaned and disinfected daily and well ventilated.
- (vi) The virus spreads in congregate settings and, where poor sanitation, poor ventilation, and overcrowding exist the virus can overwhelm a population, particularly a population with co-morbidities or that is

elderly. Thus, where feasible, congregate settings should be limited to only individuals for whom there is no alternative. This is especially important for those at increased risk of developing severe disease or death.

(c) **Treat individuals with COVID-19**

If treatment with COVID-19 on-site is to be provided then the capacities, and timely access to facilities is critically important. The clinical status of patients with COVID-19 can, and often does, deteriorate rapidly.

(d) **Infection control**

I have noted my concerns around ‘cohorting’ in the Government’s recent guidance on COVID-19 in prisons.

I also have other, more minor concerns, related to earlier guidance dated March 16th 2020 where specifically, it was suggested that:

- (i) on cases being transferred to an isolation room ‘[e]scorting staff do not require PPE but must clean their hands on leaving the prisoner or detainee.’ The primary route of transmission of this virus is through the respiratory route. Respirators, or at a minimum, medical masks, for escorting staff would seem appropriate, in my opinion. This would be consistent with Government advice in health care settings.
- (ii) The spread of COVID-19 through objects is acknowledged, and the recommendation to ‘[f]requently clean and disinfect objects and surfaces that are touched regularly’ made. Specific advice such as how often is not articulated and, it seems, is left to individual prisons to determine. I am not familiar with the use of fingerprint scanning but believe such tools to be used in some prisons and the risks of fomite spread are of real concern to me.

12. **Please explain the concept of cluster amplification, and the impact that the spread of COVID-19 within the prison estate may have on the spread of the virus amongst the UK population.**

12.1 Prisons and centres of detention are well-recognised ‘epidemiological pumps’. For example, prisons in the former Soviet Union and the United States in the 1990s were settings for explosive outbreaks of multidrug resistant tuberculosis and HIV that spread beyond prisons to transmit to non-prison populations. Congregate settings, notably in hospitals, were the driving context for the spread of SARS in 2003.³³ The outbreak on the Diamond Princess cruise ship showed the potential for transmission and disease in a closed setting. The authors of an analysis concluded ‘Unless strict infection management and control are taken, our findings indicate the potential of COVID-19 to

³³ <https://www.sciencedirect.com/science/article/pii/S1201971220300916>

cause greater outbreak on the ship.’³⁴ Analysis of COVID-19 outbreaks seeding wider community transmission supports this assertion.³⁵ For example, the ski chalet-associated cluster in France and the church- and hospital-associated clusters in South Korea were preludes to widespread transmission. Moreover, since gathering in closed environments was prohibited in the wake of the rapid spread of the disease in China, the incidence of disease has declined. Reduction of unnecessary close contact in closed environments may help prevent large case clusters and superspreading events that seed beyond those confines.

- 12.2 The evidence emerging from New York shows that young people can be seriously affected by this disease and can therefore facilitate the epidemiological pumps, which is highly relevant in prison settings.
13. **How might the creation of “temporary prisons” in other institutional settings, such as former immigration detention centres, affect the spread of the virus?**
- 13.1 The transmission of SARS-CoV-2, as I have indicated, is dependent upon exposure, infection, and disease progression. Each of these will be affected by the environment, characteristics of the population, and any ‘new’ entrants to the population. How the transmission dynamics in ‘temporary prisons’ will be different from ‘permanent prisons’ depends upon how these features change. Changing one feature, such as fewer cells and more dormitories, will likely impact upon each element. If overcrowding, sanitation, population ‘churn’ and cases of COVID-19 do not enter, then these features of a ‘temporary prison’ will result in less chance of an outbreak. If however, for example, COVID-19 cases enter such a prison, the close proximity and mixing of prisoners and others increases, and sanitation is limited, then one would expect an outbreak to expand rapidly.
- 13.2 In my view, there would be real concerns if the creation of temporary prisons involved increased churn and movement of prisoners and so long as they remain in congregate settings, all the concerns I have outlined above apply.
14. **Please express a view on the urgency with which preventative measures should be taken to reduce the risk of COVID-19 entering or spreading within the prison estate.**
- 14.1 This pandemic is the most serious public health crisis the world has faced in more than a generation. Case numbers are climbing exponentially around the world. Health systems are going to be stretched close to, or beyond, breaking point. Outbreaks in prisons are occurring. Time is of the utmost importance. This pandemic has a doubling time measured in days. Delays of 30 days or 60 days are an eternity when an epidemic is growing at this exponential rate. Prevention of outbreaks in prisons will always be easier than control of outbreaks.
- 14.2 There is, it seems to me, an imperative to prevent any prisoners and staff being exposed, reduce the risk of spread from prisoners developing COVID-19 to other prisoners (and

³⁴ <https://www.sciencedirect.com/science/article/pii/S1201971220300916>

³⁵ <https://www.medrxiv.org/content/10.1101/2020.02.28.20029272v1>

others), and ensuring those that do succumb receive medical care in a timely and appropriate manner to reduce suffering and offer them the best chance of survival. Action to address these issues in prisons is needed extremely urgently.

- 14.3 What must not be forgotten is that, there is also a wider public health imperative. Reducing the potential for settings such as prisons to act as epidemiological pumps to the wider community is an urgent consideration.

Declaration

The contents of this report are true to the best of my knowledge and belief. I understand that in preparing this report I have an overriding duty to the Court, as defined in the *Ikarian Reefer* case and I confirm that I have complied with this duty. Although based in Bangkok, I would be prepared to attend the Court via videoconference to give evidence if required.



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1st April 2020

ANNEX 1 INSTRUCTIONS

General opinions concerning COVID-19, its nature and transmission

1. What is COVID-19, how is it spread between individuals and what is known about the stage at which transmission peaks?
2. What are the symptoms of a person affected by COVID-19, including the symptoms for persons with a mild infection, severe infection, and critical infection? Please explain how the virus affects a person's physiology. What is known about the potential long term health consequences of COVID-19?
3. How long may a person who has contracted COVID-19 be asymptomatic? What is known about the risks of transmission of asymptomatic individuals?
4. Please explain the accuracy of tests administered to screen people for COVID-19?
5. What underlying conditions (including age and pre-existing health conditions) may increase the risk of an individual:
 - (a) contracting COVID-19;
 - (b) suffering severe symptoms;
 - (c) dying?

Please also consider the list of persons identified by Public Health England as being particularly vulnerable to COVID-19 (available at <https://www.gov.uk/government/publications/guidance-on-shielding-and-protecting-extremely-vulnerable-persons-from-covid-19>). Are there any other health conditions which you consider place people at increased risk of severe illness upon contracting COVID-19?

6. What is the current rate of:
 - (a) infection;
 - (b) suffering severe symptoms; and
 - (c) mortality, within the community?
7. What is currently known about the risk COVID-19 may pose to those who do not have underlying health conditions, including younger people? Please explain the risks to such persons of suffering symptoms which may require hospitalisation, upon contracting COVID-19.

COVID-19 in prisons in England and Wales

8. What is the likelihood of COVID-19 entering all prisons in England and Wales?
9. What is the likely rate of:
 - (a) infection;
 - (b) suffering severe symptoms; and

- (c) mortality,
within a prison setting compared to the community? Does the security category of the prison affect this?
- 10. Please explain whether the conditions in prisons described in the enclosed briefing may increase the risk of a widespread outbreak of COVID-19. Please explain whether any other factors may increase the likely infection rate in a prison.
- 11. What practical measures would be necessary within a prison to:
 - (a) minimise the risk of individuals who are currently detained contracting COVID-19; and
 - (b) properly isolate and contain COVID-19 where an individual (or individuals) has contracted the virus?
- 12. Please explain the concept of cluster amplification, and the impact that the spread of COVID-19 within the prison estate may have on the spread of the virus amongst the UK population.
- 13. How might the creation of “temporary prisons” in other institutional settings, such as former immigration detention centres, affect the spread of the virus?
- 14. Please express a view on the urgency with which preventative measures should be taken to reduce the risk of COVID-19 entering or spreading within the prison estate.

ANNEX 2
BACKGROUND BRIEFING BY THE HOWARD LEAGUE FOR PENAL REFORM
AND THE PRISON REFORM TRUST

COVID-19 in prisons in England and Wales

1. According to the Ministry of Justice's daily update on 31 March 2020, as of 17:00 on Monday 30 March 2020, 65 prisoners have tested positive for COVID-19 across 23 prisons; 14 prison staff have tested positive for COVID-19 across eight prisons and four Prisoner Escort and Custody Services (PECS) staff have tested positive for COVID-19.
2. Two people have died in prison who had COVID-19: the first was a man aged 84 who had been detained in a Category C prison in Cambridgeshire, who died on 22 March 2020 in hospital and the second was a man aged 66 detained in prison in Manchester, who died on 25 March 2020.³⁶
3. Staff shortages due to self-isolation have already been reported: as of 24 March 2020, the Lord Chancellor reported to the Justice Committee that 4000 prison staff were in self-isolation (approximately ten per cent of the work force).³⁷ It is highly likely that this number has increased significantly since then.

Prisons in England and Wales – background

Prison types, demographics and movement in and out of prisons

4. There are 117 prisons in England and Wales. Her Majesty's Prison and Probation Service (HMPPS) runs most of these (104). Three private companies operate the remaining 13 (G4S and Sodexo manage four prisons each, and Serco manages five).³⁸
5. Prisons are divided into four security categories (A to D), with Category A prisons being high security and Category D prisons being open prisons, which permit a greater degree of movement both within and outside the prisons (following a risk assessment) but usually provide dormitory accommodation.³⁹

³⁶ <https://www.bbc.co.uk/news/uk-england-cambridgeshire-52047003>

³⁷ <https://committees.parliament.uk/committee/102/justice-committee/publications/>

³⁸ The Institute for Government, website, available at: <https://www.instituteforgovernment.org.uk/publication/performance-tracker-2019/prisons>

³⁹ <https://prisonjobs.blog.gov.uk/your-a-d-guide-on-prison-categories/>

6. The demographics of the prison population in respect of age as of March 2019 were:⁴⁰

AGE PROFILE OF PRISONERS, MARCH 2019		
England & Wales		
Age	Number	Percentage
15-17	625	1%
18-20	4,105	5%
21-24	9,391	11%
25-29	14,616	18%
30-39	25,658	31%
40-49	14,619	18%
50-59	8,562	10%
60+	5,058	6%
Total	82,634	100%

7. The prison population is ageing and has been for well over a decade. Her Majesty’s Inspectorate of Prisons and the Prison and Probation Ombudsman have both criticised the Government’s lack of strategic grip over the consequences of an ageing prison population.⁴¹ People in contact with the criminal justice system, including those in prison and on probation, tend to be in poorer health than the general population and have a greater need for health and care. For many people detained in prison, their poor health status arises from, and/or has been exacerbated by, early childhood experiences (abuse, neglect and trauma) social circumstances (problems with housing and employment) and higher rates of smoking, alcohol and substance misuse.⁴²

8. Men make up 96 per cent of the prison population (79,411, as of 27 March 2019).⁴³

9. Large numbers of individuals enter and leave the detention estate, sometimes for a very short period of time. There were more than 73,000 receptions into prison in the 12 months to September 2019.⁴⁴ There were more than 64,000 releases from prison in the

⁴⁰ <https://researchbriefings.files.parliament.uk/documents/SN04334/SN04334.pdf>.

⁴¹ Prisons and Probation Ombudsman (PRH0017), Q61 Peter Clarke

⁴² Home Office, Public Health England and Revolving Doors Agency (2017), Rebalancing Act: A resource for Directors of Public Health, Police and Crime Commissioners, the police service and other health and justice commissioners, service providers and users

Ministry of Justice (2020), Prison Population Statistics Weekly 27 March 2020., London: Ministry of Justice

⁴⁴ Table 2.1, Ministry of Justice (2020) Offender management statistics quarterly: July to September 2019, London: Ministry of Justice

12 months to September 2019.⁴⁵ According to the Ministry of Justice, between July and September 2019, 6,608 people entered prison to serve sentences of 6 months or less (47% of all sentenced offenders entering prison during that time).⁴⁶ In the same period, 2,174 people who were serving sentences of 12 months or less were recalled to prison for short periods.⁴⁷ In the same period there were 7,649 untried admissions into custody on remand. Only 1,875 of these untried admissions were for the most serious offences (violence against the person or sexual offences). 1,108 of these untried admissions were for drugs offences.⁴⁸

10. Prison staff, contractors and healthcare staff visit on a daily basis. Other persons such as lawyers and family members were visiting until such visits were officially cancelled on 24 March 2020.⁴⁹

Conditions generally

11. Short-staffed, overcrowded and old prisons severely limit access to healthcare and the ability of prisoners to lead healthy lives. Evidence collected and presented by Her Majesty's Inspectorate of Prisons (HMIP), the Care Quality Commission (CQC) and others has shown a system struggling to cope.⁵⁰
12. Almost 70% of prisons in England and Wales are overcrowded, (84 of the 121 prisons), with nearly 18,700 people held in overcrowded accommodation—more than a fifth of the prison population.⁵¹ This is not a new problem; the prison system as a whole has been overcrowded in every year since 1994.⁵² On 26 March 2020, the Prison Governors' Association noted that the prison service remains "an overcrowded Service, with a number of our prisons holding two people in a cell built for one, which adds to the challenges of self-isolating. We also have dormitory accommodation which makes social

⁴⁵ Table 3.1, *Ibid.*

⁴⁶ MoJ Offender management statistics, *Prison receptions: July to September 2019*, table 2.5a <https://www.gov.uk/government/statistics/offender-management-statistics-quarterly-july-to-september-2019>

⁴⁷ MoJ Offender management statistics, *Prison receptions: July to September 2019*, table 2.6 <https://www.gov.uk/government/statistics/offender-management-statistics-quarterly-july-to-september-2019>

⁴⁸ SOURCE: MoJ Offender management statistics, *Prison receptions: July to September 2019*, Table 2.4b. Available at: <https://www.gov.uk/government/statistics/offender-management-statistics-quarterly-july-to-september-2019>

⁴⁹ <https://www.gov.uk/government/news/prison-visits-cancelled>

⁵⁰ House of Commons Health and Social Care Committee (2018) *Prison healthcare*, London: HMSO

⁵¹ Table 2.2, 2.3 and 2.4, Ministry of Justice (2019) *Annual HM Prison and Probation Service digest: 2018 to 2019*, London: Ministry of Justice

⁵² Home Office (1999) *Digest 4: Information on the criminal justice system in England and Wales*, London: Home Office and Table 2.2, Ministry of Justice (2019) *Annual HM Prison and Probation Service digest: 2018 to 2019*, London: Ministry of Justice

distancing a challenge. It is impossible to mirror exactly Government edict in a prison, despite the enormous efforts of managers and their staff”.⁵³

13. The prison service has suffered from chronic staff shortages in recent years. In its latest annual report, published in June 2019, the Independent Monitoring Board found that “impact of staff shortages was far from over. There were still significant difficulties across nearly all kinds of prisons: some were still struggling to deliver acceptable and consistent regimes, and nearly all were expressing concerns about the safety implications of a high proportion of inexperienced young staff, as regimes were gradually being relaxed and prisoners were out of their cells for longer”.⁵⁴
14. Many prisons operate in unsanitary conditions. A quarter of the prison estate was built before 1900.⁵⁵ According to the CQC, these older prisons negatively affect prisoners’ wellbeing and the safe delivery of care.⁵⁶ Prison cells are cramped spaces in which people detained in prison often sleep, eat and go to the toilet. The CQC reported that: “The significant impact on prisoners’ general health and wellbeing includes increased risks associated with privacy/confidentiality, communicable diseases, sleep hygiene and anxiety/depression.”⁵⁷
15. Before the COVID-19 crisis, the House of Commons Health and Social Care Committee conducted an inquiry into prison health. It described the Committee’s visit to a prison cell as follows:⁵⁸

At our visit to HMP Belmarsh, we were shown a three-bed cell, consisting of a bunk bed on the left-hand side and another bed up against the opposite wall, with a metre-wide gap between the two beds. There was little room to move; if all three men were standing up there was not enough space for them to pass each other without touching. To the right-hand side of the entrance there was a sink, a plastic bin and a tiny mirror, about the size of a small paperback book. There was a toilet in the right-hand corner of the room. The toilet had a small door with a gap below and above. However, not all cells, we were told, have a toilet door. The main door to the room was not barred, but the wall on the other

⁵³ Prison Governors’ Association, Press Release, 26 March 2020, <https://prison-governors-association.org.uk/prison-governors-association-covid-19/>

⁵⁴ <https://s3-eu-west-2.amazonaws.com/imb-prod-storage-1ocod6bqky0vo/uploads/2019/06/IMB-NATIONAL-ANNUAL-REPORT-PUBL-5-JUNE-2019.pdf>

⁵⁵ National Audit Office, Short guide to the Ministry of Justice, October 2017

⁵⁶ Care Quality Commission (PRH0004) evidence to the House of Commons Health and Social Care Committee inquiry on prison healthcare

⁵⁷ Ibid.

⁵⁸ House of Commons Health and Social Care Committee (2018) Prison healthcare, London: HMSO

side had a fairly large window, providing some natural light in the cell. There were two cupboards either side of the window, both broken.”

16. The Health and Social Care Committee concluded that: “The Government is failing in this duty of care towards people detained in prisons in England. Too many prisoners remain in unsafe, unsanitary conditions that fall far short of the standards we should expect.”⁵⁹
17. In February 2020 a report from the National Audit Office revealed a chronic state of disrepair across the prison estate, from leaking roofs and failed heating systems to broken cell windows and rat infestations.⁶⁰ HM Inspectorate of Prisons has consistently reported that too many prisoners endure unsafe, poor and overcrowded living conditions. It rated more than 40% of inspected prisons as ‘poor’ or ‘not sufficiently good’ for ‘safety’ between 2015-16 and 2019-20.
18. There are usually over 13,000 prisoners working to provide prison services at any one time, such as cleaning prison wings or cooking in the kitchens.⁶¹ 10 out of the 35 men’s prisons reported on by HMIP during 2018–19 failed to meet minimum standards of infection control compliance and cleanliness.⁶² In his latest annual report, HM Chief Inspector of Prisons commented that whilst prisoners might be employed in these roles, they don’t always have the necessary equipment to fulfil these tasks. “I have met painters who had neither paint nor brushes, and cleaners whose mops were bone-dry.”⁶³
19. A large maintenance backlog also limits access to many vital resources, including washing and toilet facilities, kitchen equipment and cleaning facilities, environments already struggling to provide an adequately safe and decent environment. Summarising the findings of Independent Monitoring Board reports, Dame Anne Owers said:

“[IMBs found] failings that impacted directly on health and safety: overflowing toilets and urinals, damp, mould and unheated cells, and a sewage pipe uncapped for months... In Exeter prison, prisoners were reduced to using buckets to flush their toilets, as they were blocked and there was waste and excrement on the floor and overflowing urinals. Many establishments had essential kitchen equipment unrepaired for many months; the same was true for

⁵⁹ Health and Social Care Select Committee, The state of health and care in English prisons, 1 November 2018, available at: <https://publications.parliament.uk/pa/cm201719/cmselect/cmhealth/963/96304.htm>

⁶⁰ National Audit Office, *Improving the Prison Estate*, 7 February 2020, page 14, available at: <https://www.nao.org.uk/report/improving-the-prison-estate/>

⁶¹ Ministry of Justice Education and Employment Strategy, (2018) page 6, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/710406/education-and-employment-strategy-2018.pdf

⁶² HM Inspectorate of Prisons (2019) Annual Report 2018–19, London: HMIP

⁶³ *Ibid.*

washing machines and driers, with prisoners in Bristol having to wash their clothes in buckets.”⁶⁴

“Boards continued, rightly, to raise the more fundamental and so far intractable issue of two prisoners sharing a cell meant for one, with a toilet, sometimes unscreened, in a cramped space where they also ate their meals. This would not be acceptable in any other publicly owned building. In some cases, as the Pentonville and Nottingham boards pointed out, those cells were so small as to contravene basic international standards for cell space. Even worse, 400 prisoners at Coldingley and half those at Long Lartin were in cells without any integral sanitation, and had to use the unreliable ‘night sanitation’ systems.”⁶⁵

Healthcare in prisons generally

20. Low staffing levels, excessive waiting times for some services and inadequate management of prisoners with chronic conditions are three recurrent concerns HMIP and CQC have about the delivery of healthcare in prisons, based on the findings of their joint inspections.⁶⁶
21. Most prison healthcare providers struggle to recruit and retain health staff with the requisite qualities and skills. For example, Her Majesty’s Inspectorate of Prisons told the Health and Social Care Committee they “consistently observe acute staff shortages within prison health provision and this is often the primary reason for gaps in provision.”⁶⁷
22. The Health and Social care committee also reported on prisoners’ experience of healthcare.⁶⁸ It found that prisoners often struggle to get health concerns acted upon in timely way. Prisoners frequently report long delays in having their health concerns acted upon. This can include worrying symptoms not being responded to in a timely manner, if at all. It also heard that prisoners can experience problems getting help in an emergency. This includes prisoners experiencing suspected stroke or heart attacks, those with serious health conditions (e.g. a cancer diagnosis) or prisoners in a mental health crisis. Prisoners frequently complain about waiting a long time for call bells to be answered or not having calls answered at all. Getting help in an emergency is particularly difficult during periods of low staffing (e.g. at night).

Regime in prisons generally - arrangements for exercise, showers, use of phones, food etc

23. In recent years, many prisoners have spent the vast majority of their time in their cells. HMIP expects prisoners to be unlocked for at least 10 hours a day, but over the last

⁶⁴ [Owers, A. \(2019\) IMB National Annual Report 2017/18. London: IMB](#)

⁶⁵ Ibid.

⁶⁶ Her Majesty’s Inspectorate of Prison for England and Wales, Annual report 2017/18, July 2018, HC1254

⁶⁷ Written evidence from Her Majesty’s Chief Inspector of Prisons, Health and Social Care Committee enquiry on Prison Healthcare, PRH0039, para. 13, available at:

<http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/health-and-social-care-committee/prison-health/written/83925.html>

⁶⁸ House of Commons Health and Social Care Committee (2018) Prison healthcare, London: HMSO

two years have found this to be the case for only a minority of people in adult male prisons (10% in 2018/19 and 16% in 2017/18).

24. Giving evidence to the Justice Committee on 24 March 2020, Director General of HM Prison Service Jo Farrar explained that 60% of prison cells have in-cell telephony. For those who do not, “we are ensuring that people have access either to handheld devices, which we have secured, or to phones on the landing that they can use.”⁶⁹ However, to date we have only been made aware of 900 secure mobile phones being provided (see below).
25. In recent years electronic kiosks on prison wings to allow prisoners to submit applications, order canteen items and food, or topping up phone credit have been rolled out in many prisons. Food is either delivered to the cell door or collected from a servery or hotplate. In most prisons, showers are not in cells and prisoners need to be let out to use communal showers. Association time is strictly prescribed and usually involves whole wings mixing on the landings or in exercise yards. Most access to education, intervention or workshops involves walking around the prison on what is usually termed free-flow.

Ministry of Justice response to COVID-19

26. On 12 March 2020, the Prisons Minister made a statement on prison preparedness for COVID-19.⁷⁰ It was noted that basic hygiene is a key part of tackling the virus and good practice is being promoted on posters throughout the estate. It was stated that handwashing facilities are available to all prisoners – not just in cells but other shared areas such as education blocks and kitchens.
27. On 23 March 2020 all face to face hearings before the Parole Board were cancelled.⁷¹
28. On 24 March 2020 the Ministry of Justice announced that all prison visits were cancelled.⁷² At the same time it was announced that 55 prisons were to receive 900 secure phone handsets to help maintain family contact during COVID-19 outbreak and the Prison Service was also exploring the use of video calls at six pilot sites, to allow prisoners to be called by their families in a secure environment with strict safeguards.

⁶⁹ [Jo Farrar, House of Commons Justice Committee, oral evidence to inquiry on the work of the Lord Chancellor, 24 March 2020](#)

⁷⁰ <https://www.gov.uk/government/news/coronavirus-covid-19-prison-preparedness-lucy-frazer-statement>

⁷¹ <https://www.gov.uk/government/publications/immediate-cancellation-of-all-face-to-face-hearings>

⁷² <https://www.gov.uk/government/news/prison-visits-cancelled>

29. Since then further changes have been made by the Ministry of Justice to how prisons operate.⁷³ The usual regime in prisons has been paused temporarily “to apply social distancing”. This means prisoners can no longer take part in usual recreational activities such as using the gym, going to worship or visiting the library. Only essential workers such as kitchen staff or wing cleaners will continue with their jobs but people will still get paid.

30. Giving evidence to the Justice Committee on 24 March 2020, Jo Farrar said:⁷⁴

“From today [24 March], they will spend more time in their cells, but we will be making sure that people come out for meals, to make phone calls to family or other people that they need to phone, and to have their health attended to and to take showers. We will also be making arrangements for people to exercise in the open air with proper social distancing.” She also stated: “We are managing a number of people in prisons. We have access to healthcare in prisons. We had a delivery of 50,000 masks this weekend, which has helped us to make sure that prison officers are able to do the things they need to do with people in our care. We are trying to shield the vulnerable. If we have a case in a wing, for example, we do some things around that wing to make sure that it is shielded from the general prison population to stop the virus spreading to more vulnerable populations.”

She also confirmed that

“At the moment, we are moving people around the estate to make sure that we have more people in single accommodation. If we are closing places, it will, if anything, be the more crowded places to get people into single accommodation.”

31. The Howard League and the Prison Reform Trust have been in correspondence with the Secretary of State for Justice in respect of their concerns about the risk to life of both prisoners and staff. On 31 March 2020, in a letter to the Howard League and the Prison Reform Trust, the Lord Chancellor stated:

“In your original letter, you rightly stressed the vulnerability of some prisoners, and the additional risks that they may be exposed to in custody. I can now confirm that pregnant women, and those with their baby in custody, will be urgently considered for temporary release. This will be managed through Release on Temporary Licence (ROTL) on compassionate grounds, and will be subject to an individual risk assessment. We are actively, and urgently, considering whether to extend this to other groups most vulnerable to COVID-19 on health grounds as identified by the NHS.

We are working closely with DWP, MHCLG and the NHS to make sure necessary support is in place, so that releases can be finalised at the earliest opportunity in all appropriate cases.

⁷³ <https://www.gov.uk/guidance/coronavirus-covid-19-and-prisons>

⁷⁴ [Jo Farrar, House of Commons Justice Committee, oral evidence to inquiry on the work of the Lord Chancellor, 24 March 2020](#)

We are progressing additional measures to mitigate the risks in custody and shield vulnerable individuals, including opportunities to provide additional capacity in the existing estate. We will shortly be providing further guidance to prisons on how they can apply effective shielding strategies in their establishments and manage their populations most effectively to mitigate the risks of large outbreaks.

Further releases remain under urgent consideration. I would welcome further engagement with you as we continue to develop our approach to the challenges we face. I hope you will recognise the urgency with which we are responding to the situation, and our focus on protecting those most vulnerable to the risks posed by COVID-19.”

32. The decision to release certain pregnant women and mothers placed in Mother and Baby Units on a temporary basis was announced by the Ministry of Justice publicly on 31 March 2020.⁷⁵ The BBC’s Danny Shaw has reported that this will result in the release of 35 pregnant prisoners and 34 women in mother and baby units from jails in England and Wales due to COVID-19.⁷⁶

Other reports of responses to COVID-19

33. Practices reported in response to COVID-19 include "cohorting" (for instance in Wandsworth prison), where prisoners with milder cold and flu-like symptoms are forced to share cells with confirmed COVID-19 patients in an "isolation" wing.⁷⁷
34. During calls to the Howard League legal advice line, children and young adults in prison have reported the following in recent weeks:
- Most people now spending between 23 to 23 and a half hours a day alone in their cells with no activities or interventions other than education sheets under the door for some children;
 - Exercise in small groups, ranging from groups of three or four for children to groups of over 20 for young adults (often unlocked by the same group of officers);
 - All jobs within prisons for prisoners suspended (including cleaning and kitchen jobs);
 - Acute anxiety among young people who use inhalers or who are worried about elderly relatives, as well as those who are eligible for early release applications that have not been processed or accepted;
 - Variations in ability to access the outside world with some children having plenty of phone credit and some young adults having barely any;

⁷⁵ <https://www.gov.uk/government/news/pregnant-prisoners-to-be-temporarily-released-from-custody>

⁷⁶ <https://twitter.com/DannyShawBBC/status/1245046448623964160>

⁷⁷ The Guardian, UK prisoners with flu symptoms forced to share cells with those with Covid-19, 31 March 2020, available at: <https://www.theguardian.com/society/2020/mar/31/uk-prisoners-covid-19-symptoms-forced-share-cells>

- Young adults being forced to share cells, including in one prison with confirmed cases; and
- Some young people concerned about reductions in canteen (access to extra food that they usually rely on).

Howard League for Penal Reform
Prison Reform Trust
31 March 2020