

A MIXED METHOD APPROACH TO ASSESS INFLUENZA, SARS-COV-2 AND OTHER ACUTE RESPIRATORY INFECTIONS SURVEILLANCE IN PRISONS

Background paper

*developed for the United Kingdom Health Security Agency by the Health In Prisons
Programme (WHO-HIPP), Regional Office for Europe.*

Abstract

This document focuses on surveillance systems for respiratory infections in the WHO European region. A mixed-methods approach was used to collect the views from a restricted group of prison practitioners and individuals with policy/senior managerial functions and experts in infectious diseases from partner agencies, using an online survey followed by a focus group discussion. Data collected focused on the currently existing surveillance mechanisms and the extent to which they were inclusive of prisons and other detention places. A particular focus was placed on ways forward to contribute to surveillance mechanisms that cover the general population. The conclusions drawn by participants suggest that developing separate surveillance systems for prisons should be a last resort and the ideal situation is to establish mechanisms that cover the population of the country regardless of their place of residence. It has also been suggested that the place of residence (which may temporarily be a prison) could be treated as a social determinant of inequity and vulnerability. However, the most common surveillance mechanisms established in Europe cover approximately 0.1% of the population, and thus the benefit of including this limited population was not consensual. Considering the limitations of the collected evidence, we consider there is insufficient robustness to support the idea that prisons should be included in national surveillance systems but consider this assumption should foster additional debates. We recommend the organization of a wider debate, during which the relevance of including prisons in national surveillance mechanisms can be discussed more in depth and involve a wider audience, aiming to reach consensus.

Keywords

PRISONS; SURVEILLANCE; COMMUNICABLE DISEASES; RESPIRATORY INFECTIONS

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Background

It has been recommended that “well-designed, representative sentinel surveillance systems in primary and secondary care remain the central surveillance method for acute respiratory infections. Sentinel systems provide robust epidemiological data that are routinely collected using common syndromic case definitions and integral microbiological testing that can be extended to multiple viruses”. However, data obtained from non-sentinel primary or secondary care laboratories and registry-based systems are also important and in these, it is relevant to include information on where the specimens were obtained (1).

It has been recommended that “Specimens testing positive for influenza viruses and SARS-CoV-2 from specific population groups and settings (targeted surveillance) should be sequenced for the purpose of detecting signals of emergence of novel virus variants with potentially changed characteristics”.

Since the 1918 influenza pandemic that the relevance of prisons in the transmission process of infectious diseases has been acknowledged (2). Outbreaks of influenza and now SARS-CoV-2 have been recognized in prison settings, and the constant interflow of people coming in and out of these premises places an additional burden also to the surrounding community when it comes to such infections. Moreover, people residing in detention places are undoubtedly disadvantaged, originating from marginalized groups of society with poor or no access to health care before admission and exposed to multiple behavioral and environmental factors that result in excess prevalence of most (if not all) conditions, when compared to the general population (3; 4; 5; 6). This implies that persons in these settings are also more vulnerable to poorer and more severe outcomes of respiratory infections (7).

However, to our knowledge, there are no established prison-specific sites regularly included in the national or regional surveillance strategy and specimens are frequently only collected in the case of outbreaks. For this reason, we would like to explore how Influenza, SARS-CoV-2 and other acute respiratory infections are currently monitored in prisons in the WHO European region and identify barriers to setting up a prison-based surveillance system that is embedded in national and regional policy.

Aims

The primary purposes of the current report were to:

- Identify the types of surveillance systems that exist around the world, with a special interest in the WHO European region, to monitor Influenza, SARS-CoV-2 and other acute respiratory infections in prisons.
- Explore the barriers and opportunities for including prisons in national, regional or local surveillance systems; or barriers to building stronger surveillance systems that are restricted to prisons.
- Propose solutions and ways forwards to setting up better surveillance systems that include people living and working in prison.

Methods

A mixed-method approach has been selected as the most appropriate to explore the research questions. Initially, a survey was developed (annex 1) and sent to a selected list of experts with a particular interest/contribution to surveillance (n=41, originating from 30 countries). The survey did not intend to be representative and was sent to selected expert in the WHO European Region, aiming to have a first insight into surveillance, which could then be further enriched with qualitative work. The list included prison practitioners and individuals with policy/senior managerial functions and experts in infectious diseases from partner agencies. The survey was structured in three parts: surveillance in clinical practice, national surveillance systems and vaccination. Participants were free to answer all three sections, or only two sections according to their background.

In a second stage, a hybrid focus group discussion was held where some of the more qualitative aspects were further explored, namely barriers to surveillance in practice, examples of good practice and suggestions for developing effective surveillance systems that are inclusive of prisons. The meeting was held in Copenhagen (18/09/2023), it was recorded, and transcripts used to code and extract meaningful explanations to gain a deeper understanding of the barriers and facilitators to effective surveillance systems that cover prisons. All participants have signed an informed consent form enabling the use of their identification (including images).

Results

There were 11 participants that responded to the survey and five of them participated in the focus group discussion. Those completing the survey originated from Austria, Azerbaijan, England, Finland, Ireland, Italy, Malta, Philippines, Thailand, and the Netherlands (Kingdom of); one participant did not disclose his/her origin. The focus group included most participants from European Region, i.e., Azerbaijan, England, Italy, Malta, and the Netherlands (Kingdom of).

The responses to the survey are summarized below and quotes extracted from the discussion are used to gain a deeper understanding of the responses to the three sections mentioned.

Section 1: Surveillance in clinical practice

Clinician participants were asked to explain how currently, in prison, they evaluated if a patient meets a case definition for any acute respiratory infection (ARI). Considering the answers obtained, it seems standard practice is to use clinical evaluation.

Inmates with upper respiratory infection symptoms are primarily evaluated by nurses. A physician is consulted, if necessary, and inmates have a physician's appointment if necessary. (Respondent 1)

Clinical evaluation for respiratory symptoms. (Respondent 2)

No differentiation of the respiratory infection is generally made, unless there is a need to distinguish between bacterial or viral to decide if using antibiotics is advised. With severe disease, the prisoner is sent to the hospital for evaluation and further diagnostics. (Respondent 5)

However, there were situations determining the need for additional testing, such as the presence of symptoms upon admission to prison: *Upon arrival, every prisoner will be separated in an isolation room*

for 5 days. If there are any signs or symptoms of respiratory infection such as cough, fever or sore throat, such prisoner would be tested. (Respondent 3)

As guidance evolved throughout time during the pandemic, some practices also varied in their stringency. As expected, this influenced the decision to request testing in certain periods and for some infections: *Prison doctors evaluate ILI, ARI and Covid-19 according to clinical symptoms and, if needed for epidemiological surveillance or treatment, obtain tests for these diseases.* (Respondent 6)

For COVID-19 self-tests are used. (Respondent 7)

Specific situations, including the occurrence of outbreaks could also determine different practices in place, namely in the requirements for testing or basing decisions on clinical evaluation: *Patients presenting with symptoms or signs of acute respiratory infection (ARI) will be assessed as per current clinical & public health guidance, including consideration of swabbing if they meet criteria. Context is also important- if there is a confirmed outbreak in the prison or high levels of infection in the community or among staff then consideration will be made about need for individual testing or whether can be considered a 'probable case' and managed according.* (Respondent 4)

Participants were then presented with the clinical criteria for ILI, ARI and COVID-19 case definitions (4) (see box 1 in annex 1) and asked to reflect about the previous answer and if they considered that their practice systematically took such criteria into consideration (Fig. 1).

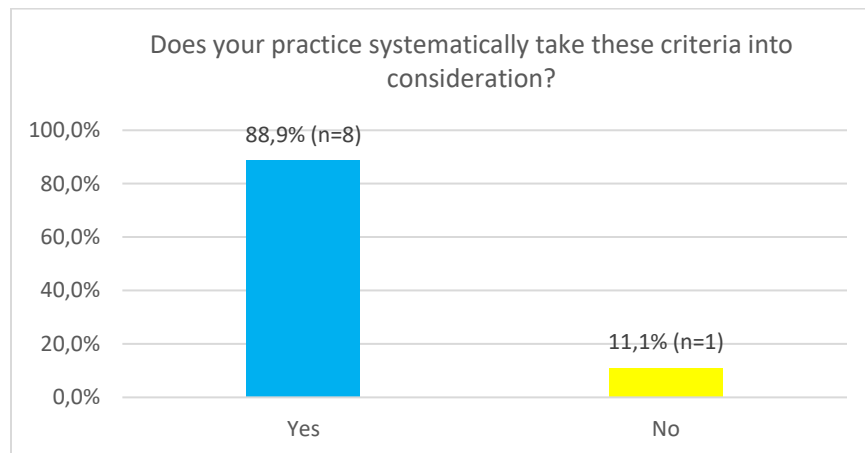


Fig. 1: Participants' perception of their clinical practice considering criteria identified in Box 1

The respondent who said no, justified the answer stating, "I do not think it is that important to undergo through all that as it is often merely flu". There were two missing answers.

Participants were then asked if they ever requested additional testing and most said they sometimes did (Fig. 2). There was one missing answer.

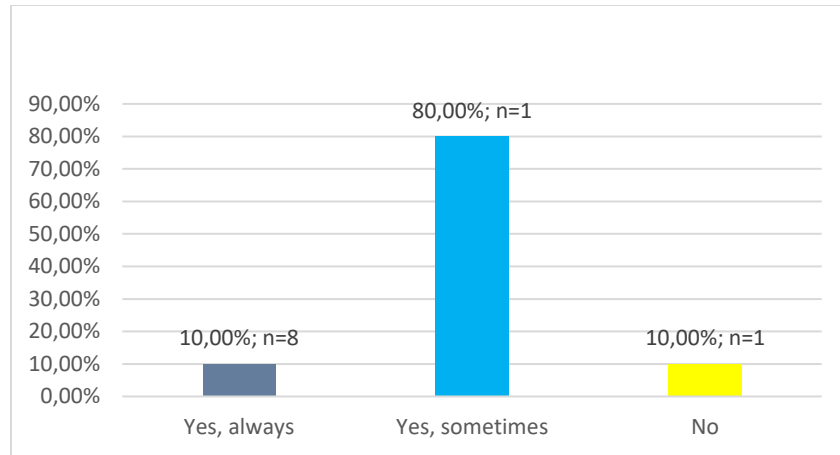


Fig. 2: Frequency of requesting additional testing when faced with acute respiratory infections

Participants were then asked to elaborate on what determines the decision to request (or not) additional tests and elaborate on possible barriers. One reason mentioned by more than one respondent to the survey was uncertainty: *Where clinical picture is unclear or uncertain - a sputum sample is taken.* (Respondent 1)

This need for testing was more pressing if imposed for epidemiological surveillance mechanisms but also if results obtained would influence the therapeutic decision, i.e., a need for a differential diagnosis: *If needed (or ordered) for epidemiological surveillance or for preventive or therapeutic decisions.* (Respondent 5)

Depending on context, individual circumstances (including underlying disease) or presenting complaint, testing for ARI may be part of differential diagnosis but could include testing also for other infectious diseases, including respiratory infections such as bacterial infections or even TB. (Respondent 4)

Other points raised that would influence the need for testing included the severity of the disease, the risk of transmission particularly among vulnerable populations: *Severity of the disease. The risk of spreading the disease to vulnerable prisoners.* (Respondent 2)

Accessibility to testing was another point raised, which may have varied throughout time and depending also on indicated severity: *The barrier is that the laboratory comes 1x or 2x per week to the prison. But if severe disease diagnostics can be done same day in nearest hospital.* (Respondent 2) Of note that the frequency mentioned by the survey respondent, although insufficient for clinical case management, is not necessarily inappropriate in terms of surveillance mechanism.

Finally, audit procedures in place also explained some of the testing made: *Select some cases to confirm the diagnosis.* (Respondent 6)

Respondents were asked if they recorded the test result somewhere and all stated YES (missing=2). The use of the clinical file was the most common for recording these results: *Test results are recorded in clinical records and medical database.* (Respondent 1)

Test results are always recorded in patient records. (Respondent 3)

But some of the respondents also referred to a centralized health record used in general: *Result is documented in patient's file. In addition, online centralized health system software - 'iSOFT' documents patients results digitally. The data can be easily retrieved based on patient's ID number.* (Respondent 2)

Whereas others referred to a centralized health record, which was only developed for COVID-19: *We have the special "Unified automated information system" (Base) for registration cases of SARS-CoV-2.* (Respondent 4)

Respondents were asked if they had permissions to access the European Surveillance System TESSY¹ or if they were aware of any prison-based colleague who had such permissions and all answered NO (missing=1).

During the focus group discussion, this aspect was further explored. Indeed, the common situation was to use national, regional or local databases built specifically for prisons instead of using the well-established surveillance systems that expand beyond detention. The level of sophistication of these databases also varied considerably across countries.

"I work with three other doctors in prison and none of us have access to it. So, as a kind of replacement, on a national level, what we do is that we have a database that is updated daily (this database covers all prisons in Malta), with a prisoner code ID, and we call it infectious diseases database. For Inmates who have either Hep B, Hep C, HIV, syphilis, TB or any respiratory illness, we update any detected infectious illness on this database. The only issue with using an excel sheet as a database is that if you forget to update it on a particular day, it doesn't add up any more...so for example, there are lots of checks that need to be done, to ensure all stats are correct; discharged inmates are removed from the database and put on a separate data sheet...Then once a month, we forward this database to Maltese public health consultants so that they can look into this shared data to see if there are any trends, any major changes or fluctuations" Chris Cremona, Malta

Additional details were presented for Influenza, where the decision to record or not also varied according to the level of certainty of the causal agent for the symptoms experienced: *"If it based on clinical criteria, we never record it as this would be based on an assumption" ... "For COVID-19, the same thing, if confirmed on rapid or PCR swabs, we add the findings to this database".* Chris Cremona, Malta

A distinct procedure was described by another participant: *"What we do in the case of acute respiratory infections is a clinical diagnosis and then all the measures are taken. We take conservative measures and if the case is severe, we transfer the person to the Special Clinic of the Ministry of Justice. When it comes to ARI testing, it doesn't exist. In case ARI is detected, it is registered in an electronic database and in the patient clinical file. In my experience, in the female prison, we did not have any case that ARI led to severe clinical condition or death. Since the COVID-19 pandemic was declared, it is compulsory that everyone with symptoms undergoes a COVID-19 test and the test results get recorded. If the test is negative, the person gets the standard treatment for an ARI. As for "TESSY" system, I had never heard about".* Nargiz Abdullayeva, Azerbaijan

¹ Note: Data submission to TESSy has to be consistent with Commission Decision 1082/2013/EU and with its implementing acts. Nominated TESSy users will be provided with a specific type of user account, permissions and credentials according to the procedure and principles approved by ECDC. All personal identifiers will be removed from the data set by the Data Submitter prior to uploading case-based data into TESSy.

Specifically referring to the awareness about the European Surveillance System, it was clear that most participants were unfamiliar with it. However, even if unfamiliar, some of the assumptions made about its utility were correct and referred to its ability to distinguish cases emerging from prisons:

“Personally, I had never heard about TESSY but I would like to know if this platform can discriminate people identified in prison. If not, then it is a problem, which is what we already have in Italy at the national level. We have the obligation to report for the main infectious diseases, including COVID-19, but this obligation to report is to the national database, which does not discriminate for people living in prison... So, in summary, I think it would be extremely interesting to have this information on an international platform, but the main problem is also there. It is very important to build continuity of information. We talk a lot about continuity of care, but continuity of information is also very important, before and after incarceration but this is actually a black hole. Nicola Cocco, Italy

Some of the flaws highlighted in current surveillance systems included the inability to take a longitudinal approach, which sometimes also explained the resistance to having a label of “person living in prison”: *We were discussing this at the regional level, in Lombardy, for example, they were saying there is the risk that people get the label and could be there forever, because it’s not a dynamic tool, at least those I know. ...The point is that it is very difficult to have the information of one person and follow the life of that person, so if the life of that person is changing, the information should also be changing, no?! Nicola Cocco, Italy*

This longitudinal inability was also expressed as possibly resulting from incorrect data entry: *...But reporting by the physicians is not always done correctly, so... for instance, we did a big analysis with TB, because we wanted to stop the entrance screening in the prisons, and then we looked at all the diagnosed people who were in detention diagnosed according to national surveillance system, the records were traced at the municipal health services, and there were a lot of people who were diagnosed as in prison but they were (in fact) not diagnosed in prison, they were just once ever in prison... Margreet Kamphorst-Roemer, The Netherlands (Kingdom of)*

Section 2: National surveillance systems

Participants were asked if they had a national surveillance system for Influenza, SARS-CoV-2 and other acute respiratory infections and all stated unanimously YES (missing=0). The types of systems were further specified and the most common was for the establishment of comprehensive surveillance systems (Fig. 3).

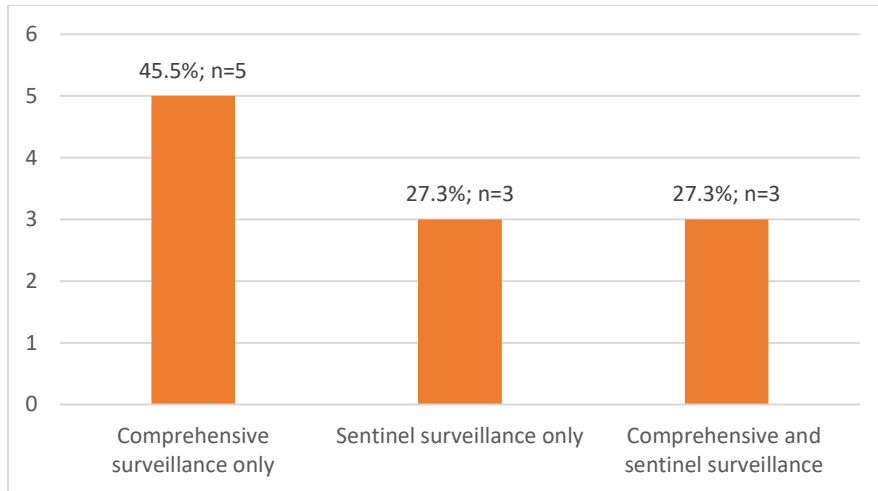


Fig. 3: Types of national surveillance systems among survey participants'

They also specified if these systems included prisons and the majority answered positively (Fig. 4).

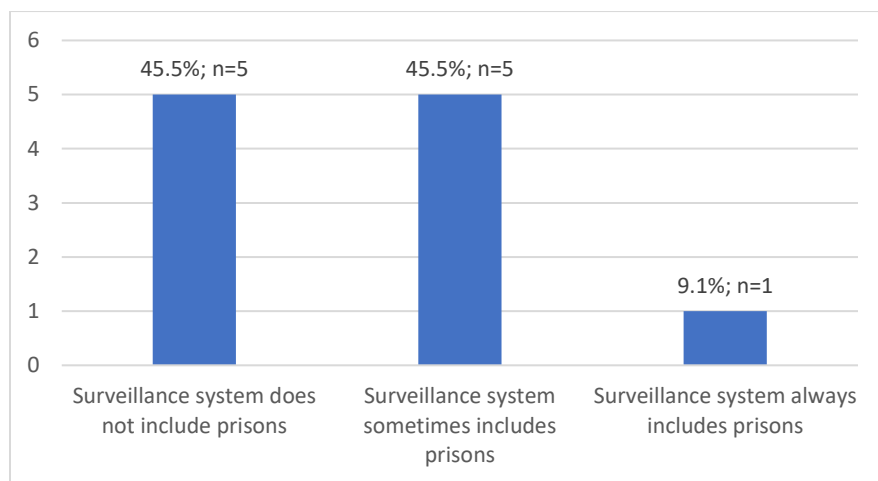


Fig. 4: Inclusion of prisons in national surveillance systems

Some of the respondents mentioning sometimes, justified their answer. Some of the aspects mentioned included:

- Classification of the disease as notifiable (or not): *Depends on whether the disease is a notifiable and the prison physician reports to the surveillance system.* (Respondent 2)
- The ability to ensure diagnosis was based on testing: *The surveillance system relies on data from all laboratories in the country that test for COVID-19. Hence, cases from prisons - provided they are tested - are included.* (Respondent 4)
- However, it was also further noted that there were barriers in the extraction and disaggregation process: *Prison data is entered in the national database, without the possibility of disaggregating them, however, by prison.* (Respondent 3)

- This inability to extract was also related to context, suggesting there were some measures in place to overcome this barrier in the future: *Residence of 'prison' or individual status as 'prisoner' is not routinely collected on national surveillance database but may be included when collecting enhanced surveillance on all COVID-19 cases or other respiratory infections. Outbreaks involving prisons will be notified as 'prison outbreaks' in terms of context but individual diagnoses will not be specifically collected.* (Respondent 1)

Among respondents mentioning that surveillance systems always include prisons, there were two clarifications made. One of the respondents referred to the existence of an automatic system through which all laboratory tests were uploaded into a shared server, regardless of their origin: *All our PCR and MCS results are shared automatically with the government's health server - as we share the same laboratory.* (Respondent 6)

However, the other respondent added that positive findings were not compulsory to be reported, an issue that was apparently common for prison and community doctors: *The laboratories' results go into the surveillance system. Doctors and laboratories are not obliged to report positive findings of Influenza, COVID-19 and ARI.* (Respondent 7)

The existing surveillance systems in countries of participants of the focus group were further detailed:

We have sentinel sites, GPs, and there is a national surveillance system where laboratories send their lab results to at the national level every day. (This information) does not link to prisons; in fact, the prisons also use these labs, so their tests will also go to the national system, but you cannot trace that it comes from prison... Margreet Kamphorst-Roemer, The Netherlands (Kingdom of)

Different approaches taken to report according to the disease at stake and the demands associated with diseases compulsory to notify were discussed in some detail:

By law, the GP that works in the prison needs to report to the municipal health services and then the municipal health services report to the national level, but they don't report or record if the diagnosis was made in prison, except for TB... Yes, for TB there is a long list that GPs have to fill in, including if it's diagnosed in detention. Margreet Kamphorst-Roemer, The Netherlands (Kingdom of)

This aspect of certain restrictions imposed in terms of surveillance and the respect for data protection was further explored as the discussion suggested this is not a uniform requirement across all conditions, where namely TB seems to be treated differently: *TB is a very prison-disease, like scabies. There are a couple of infectious diseases that are very much related to prisons in the common sense and also of course for historical reasons because when you have these epidemics in prisons, they are difficult to manage. But today it is old-fashioned to say that we have different rules for TB and for other diseases. In Italy for example, we currently have a system where the director must report other conditions that are much more prevalent, like influenza, but the reporting is done in an aggregate manner, for example, there were 15 cases this week.* Nicola Cocco, Italy

The participant from England gave a variety of examples of surveillance mechanisms in place, their inclusion of prisons, but also the pitfalls associated with each of the approaches adopted. *There are lots of surveillance mechanisms in England and none of them are perfect.*

The influence of testing availability in data quality was mentioned: *Our surveillance has changed with testing availability, so we had more testing at the start of the pandemic, and we were testing people routinely upon admission to prison with PCR and we had much better data.*

One of the systems mentioned focused on the integration of information from various sources, including test results and clinical health record, some of which automatically uploaded: *... we have the testing portal where people are supposed to upload results and of course they are also supposed to record this in the NHS clinical record.*

Access to individual clinical records by organizations in charge of surveillance was an aspect still to be overcome considering data protection laws in place, but currently overcome by querying mechanisms: *“However, we, as a surveillance organization don’t have access to that clinical record data; what we do have access to are several other different systems, so we can access laboratory data and we can query that by unique property numbers (each prison has one number assigned) but that is just going to be for PCR results.*

Completeness of data was another limitation mentioned: *“We only test the first five cases in an outbreak, so in case of a flu outbreak, we could have 100 cases, but we will have lab tests for the first five and then the rest will be diagnosed based on the clinical suspicion meeting that outbreak definition”.*

Another system mentioned was exclusive for notifiable diseases. Even though the system was built for clinical management, it had the possibility to be queried based on the location of the case. A pitfall indicated was the use of free text making extraction at national level impossible: *“And then we have an extra system, which records based on the health protection (HP) zone, which is our case management system for notifiable diseases across England. Now, we can access this system and pull data from it but it was not built as a surveillance system, it was built for case management. So, even though we may be able to identify a prison outbreak in there, either through the unique property reference numbers (UPRN) or if they flagged it as a prison, the total number of cases will be as free text so we cannot extract that unless we go into individual records, which we can’t do nationally”.*

The system configuration was described as suboptimal as it allowed for inappropriate use of longitudinal data: *“In addition, in some of our regions, where they were having outbreaks, after outbreaks, did not create a new episode for each new outbreak, they just kept one open for that prison so we may just see one outbreak in the system but in fact it may cover 5-6 different occurrences”.*

Further developments anticipated included the possibility to link with hospital and death data: *“ In addition, our data analytics team nationally have been investigating how to use the UPRN system to query for hospital admissions and for mortality from prisons, but they now have to go through a data governance process to get permission to pull out prisoners as a separate cohort. This is a bit frustrating as it makes all sense in terms of surveillance, but we are hoping we will get approval”.* Chantal Edge, United Kingdom

The 10 participants that mentioned in the survey that the surveillance system covers prisons further elaborated on the variables possible to extract (Fig. 5).

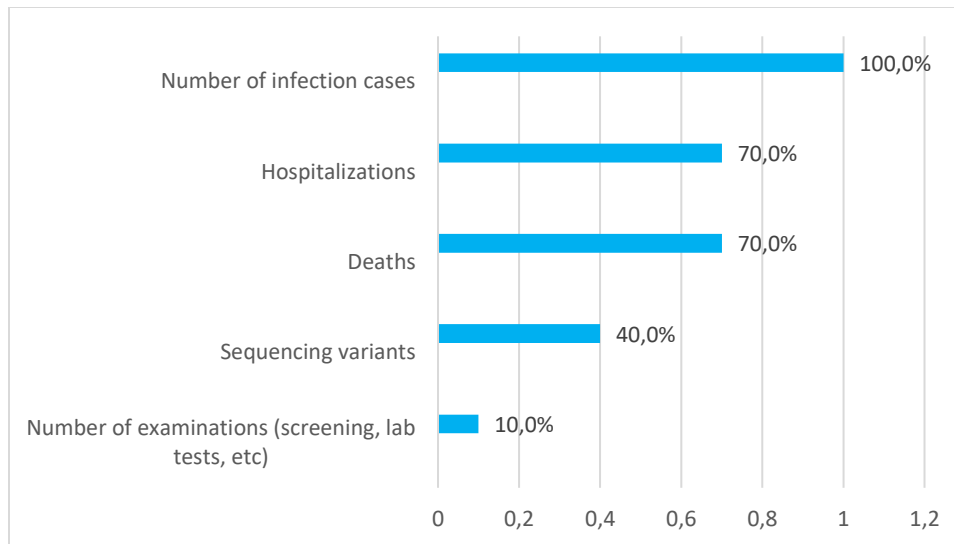


Fig. 5: Variables possible to extract from surveillance systems that cover prisons

This aspect was also further discussed in the focus group, particularly regarding the higher difficulty in obtaining mortality data, in comparison to morbidity data.

The realities described by participants were, however, quite diverse. The participant from Italy, felt that a prison stay was an interruption in a person's life and as such all-healthcare services received during the incarceration period were lost: *We do not have those data because prisons are "black holes". When you are there your course of life is interrupted and if you are lucky, it will start again once you are released. So, prison hospitalization is not recorded properly; when the person goes out they have the documentation to take to their doctor but for a surveillance system this is not useful at all.* Nicola Cocco

On the contrary, the participant from Malta described a system where all encounters with health care were captured: *In Malta, as I said we have worked on this collaboration between the Ministry of Internal Affairs and the Ministry of Health to get access to the iSOFT system, so someone can go into my record and see any time I have attended to a hospital appointment or been admitted to a hospital or any other health center. So, regarding hospitalization, there is a track of it, and this is very useful for us because we can also check this upon entry of inmates. So, we don't really have that issue.* Chris Cremona

The participant from England described a situation somewhere in the middle, where death or hospital data is not automatically linked but can be requested:

HMPPS will always record the number of deaths. We don't get this information automatically but can request it. Hospitalizations during the pandemic were recorded because there was a specific request which was later stopped when the situation de-escalated. Now, we are working to use the UPRN method to query hospital data to find patients who came from a place identified as a prison and then they can draw out, as with any other community patient, what the cause of hospitalization was or what the cause of death was, but we do need the permissions for that data to be obtained routinely. Chantal Edge, UK

Survey participants were then asked if they were aware of any surveillance system for Influenza including prisons, even if in another country and most stated NO (Fig. 6).

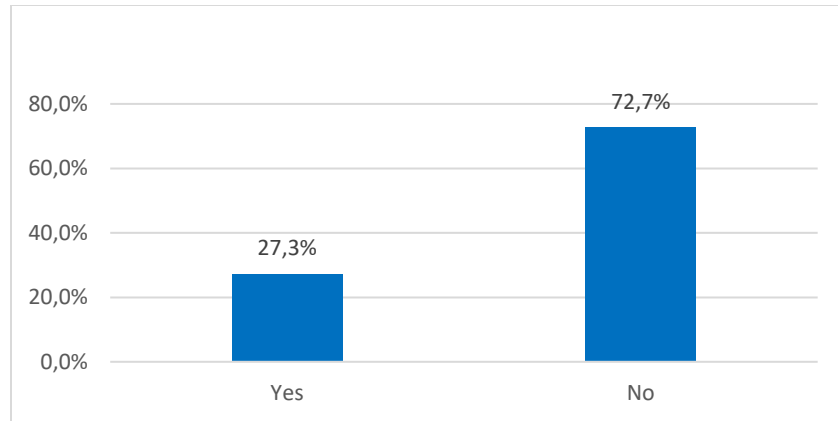


Fig. 6: Awareness about Influenza surveillance systems that include prisons

The three respondents answering YES, further specified the type of surveillance system, and the country, as follows:

- In Italy, there is comprehensive surveillance and sentinel surveillance, both at the regional and at the national level.
- In Philippines, there is sentinel surveillance (unspecified procedure).
- In Thailand, there is comprehensive surveillance, in every prison of the country.

None could, however, provide a link to such systems, suggesting they are not public.

Participants were also asked if they were aware of a similar surveillance system for SARS-CoV-2 and other acute respiratory infections and four of them said YES. Two of the respondents referred to the different demands imposed for SARS-CoV-2 in comparison to other ARI.

In prisons, testing for influenza has been rarely done whereas for SARS-CoV-2 during the pandemic regular testing has been done. (Respondent 2)

Another respondent provided a more detailed explanation of the information produced and publicly available by the existing system in England: *HMPPS provided official statistics monthly on the spread of COVID-19 in the prison and probation service in England and Wales and mitigating actions being taken to limit the spread of the virus and save lives.* (<https://www.gov.uk/government/statistics/hmpps-covid-19-statistics-february-2023/title-hm-prison-and-probation-service-covid-19-statistics-february-2023>) *It provides information on: Deaths where prisoners, children in custody or supervised individuals have died having tested positive within 60 days, in England and Wales, of the death or where there was a clinical assessment COVID-19 was a contributory factor in their death regardless of cause of death. Prisoners and children in custody who have had a confirmed case of COVID-19 (i.e., a positive test).* (Respondent 1)

In the focus group, there were additional explanations of comprehensive surveillance systems that consider various respiratory pathogens, most of which were at the time (September 2023) under development: *A new version of our system should be coming out in 2024, we have been waiting for the last five years, and the developers have been consulting with all the regions and a big part of that is to have the capacity to identify inequity and vulnerable populations and definitely be able to use more the*

case management system as surveillance; there is some hope to be able to download results into power BI, so a proper data manipulation tool. Chantal Edge, UK

When discussing the possibility of having sentinel prisons, it was suggested that this approach would only make sense if several prisons could be used. Moreover, the need to have equivalent incentive schemes for data recording in prisons and in the community was raised. *I don't know if one prison would be reflective enough of the state in prison; and we have some prisons that receive several hundreds of people a day and we have some that are quite static. And of course, we see most of the outbreaks occur in those with a high churn... another aspect to consider is that what we see in the prisons is reflective of what happens in the community outside because they are so inextricably linked with staff coming in and out, so this implies there may be differences across regions; so I think to create an appropriate sentinel-based surveillance system, you would need to have a spread... Another aspect worth considering is that our GPs are not incentivized to produce quality data, unlike what happens in the community.* Chantal Edge, United Kingdom

Following the mention that during the pandemic, some countries have adopted a wastewater surveillance system to monitor SARS-CoV-2 in prisons (e.g., Estonia for SARS-CoV-2; England and Wales for SARS-CoV-2 and Influenza), participants were asked if they thought this type of surveillance system could be easier to adopt in the criminal justice system to monitor trends in respiratory viruses and the answers were similarly divide (Fig. 8).

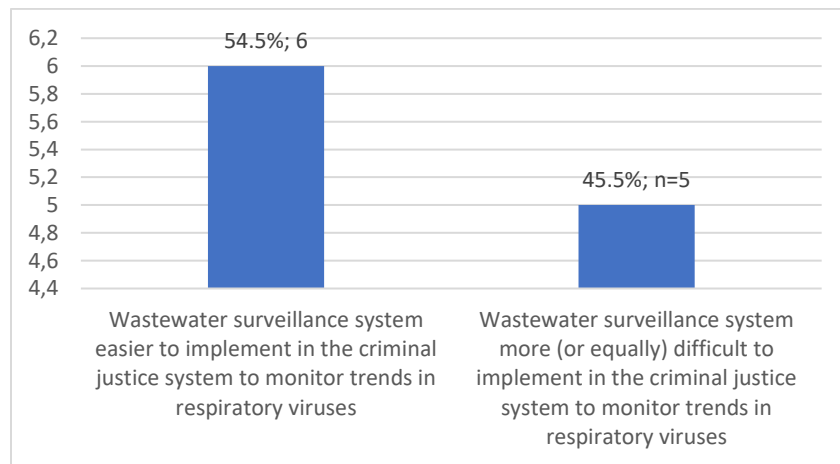


Fig. 8: Perception about how easy/difficult wastewater surveillance is to implement in the criminal justice system

Ten of these participants justified their opinion and further elaborated on the advantages and disadvantages of this approach for prompting public health action. Some of the advantages mentioned referred to the speed at which results from wastewater are obtained: *"I think it's a relatively quick method, easy to conduct"*. (Respondent 3)

Another advantage mentioned was the ability the system has to cover asymptomatic individuals and those refusing to be tested: *"Wastewater testing may include infected persons without clinical symptoms and those who refuse testing"*. (Respondent 4)

The perception of its cost varied significantly, with some respondents believing the system to be cheap compared to individual testing: *"Considering that budget may be limited for testing of individuals,*

wastewater surveillance may work.” (Respondent 2) whereas other respondents clearly pointed to the costs as a barrier for implementation: “Difficult to justify from a financial point of view locally - if testing is very costly - since we have a singular adult prison housing circa 575 inmates, a juvenile prison of 25 inmates and a psychiatric off-site facility of 9 inmates as of (6/8/23). Emphasis is on clinical case-by-case basis and close monitoring of symptoms and signs across prison population” or for maintenance: “There is wastewater treatment system in every prison in Thailand. However, there is a lack of budget put on system maintenance”. (Respondent 7)

Some of the responses obtained suggested that, even though in some countries regional wastewater surveillance systems are in place, which also cover prisons, results are used generally (community and prisons in the region) and not to identify specific problems in prisons: “Wastewater surveillance was done per region. For the prisons you could look at the results in their region. (Regions are small in the Netherlands). Incidence of COVID in the prisons has never been higher than in the regions outside the prison”. (Respondent 5)

The normal approach is, however, to only test wastewater coming from the prison, and this depends on where the sampling points are placed.

The ability of the system to generate signals was seen as useful and could constitute a good basis for decisions on escalating or de-escalating restriction measures: *Prison wastewater systems provide an opportunity to monitor part of or the whole of a prison population (depending on nature of wastewater supply) without the need for individual testing.* (Respondent 1)

even though never replacing the individual case by case analysis which may only be obtained through other mechanisms: “It depends on the means and skills that are put into action, in any case this type of surveillance allows us to outclass the many problems inside the prison for symptomatologic and/or laboratory surveillance systems. However, such a system should not be exclusive to other person-based forms of screening.” (Respondent 5)

In this aspect, the inability to distinguish the source of the infection was seen as problematic in terms of its ability to lead to response measures: “The disadvantage is that you cannot usually isolate the source of infection to specific individuals or even particular parts of the prison, and wastewater includes samples from staff as well as professional and social visitors”. (Respondent 1)

Another advantage of wastewater surveillance was its ability to cover various metabolites, including of drugs and medications, but also several different microorganisms simultaneously: “This can be used for more than one infection (and for other purposes including monitoring levels of drugs or medications)”. (Respondent 1)

And its ability to be used for monitoring variants of concern: “Nonetheless, it is a good method to detect and monitor infection including detecting variants of concern”. (Respondent 1)

Finally, an important point mentioned as an advantage of wastewater surveillance was its ability to monitor the progress of infection in a particular area, i.e., to verify if the outbreak was over: “This can also be used to track the progress of infection e.g., in response to an outbreak and can see if mitigations are controlling the level of infection detected”. (Respondent 1)

During the focus group, the issue of wastewater surveillance was further discussed, namely its advantages and disadvantages. In England, the system was not new and had in fact been abandoned: *Yes, we have it,*

and we don't have it anymore and there are reasons for that. Wastewater surveillance was put in place by the Ministry of Justice during the pandemic. There were some issues with sampling points; these are limited in prisons and it's rare that you could pinpoint to one specific area of the prison, whether it was staff or resident". There was never a way of quantifying the numbers of cases according to the levels of COVID in the wastewater, so you did know 100 cases or one persistent super shedder in that prison. There was actually no measurable reliable way to use that wastewater to inform public health actions meaningfully at this time. The only thing it helped us with was if we had an outbreak and then saw COVID levels go down to nearly zero, we could say with a bit more confidence "the outbreak seems to have ended" but it wasn't really any good for prompting action. It is useful for variants' surveillance, and it is still being used for that purpose in England but in terms of public health tool it wasn't useful, and it was very expensive. Chantal Edge, UK

Respondents to the survey were asked about their perception about their public health agency openness to create a surveillance system working collaboratively with the prison units (Fig. 7).

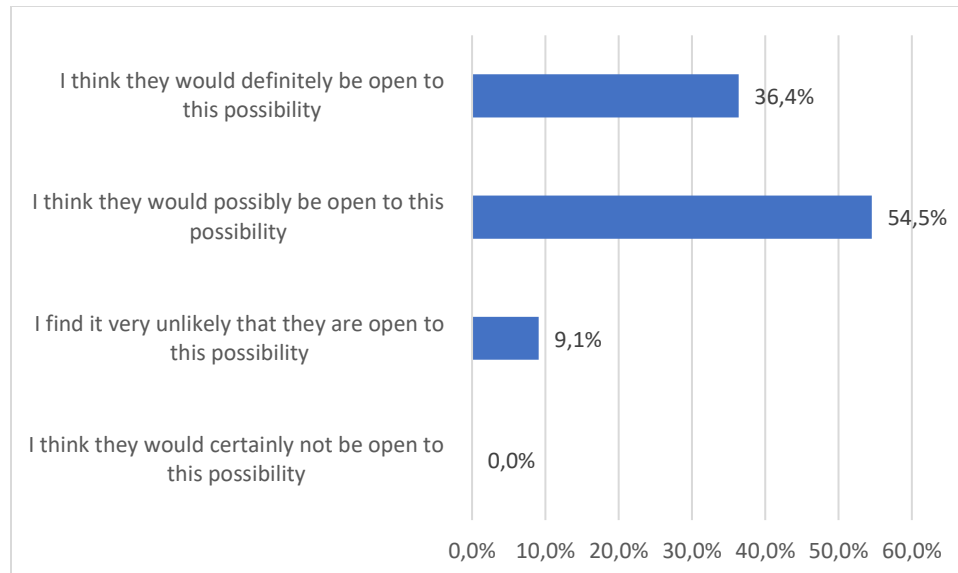


Fig. 7: Perception about public health agencies' openness to create surveillance systems working collaboratively with the prison units

The perceived barriers to this collaborative approach to the development of surveillance systems for acute respiratory infections that are inclusive of prisons were expressed by eight anonymous survey respondents and included:

Lack of coordination between ministries sharing responsibilities for the delivery or accountability for health care in prison: *"Lack of proper cooperation/coordination between the responsible ministries (MoH and MoJ)"*, an aspect that could even gain greater complexity in some countries where the ministries vary depending on the decision for conviction having (or not being taken): *"The prisons in the Philippines are under two distinct ministries. Correctional (sentenced) are under the care of Dept of Justice. Jails (awaiting sentencing) are under the Dept. of Interior and Local Government (Public Safety)"*. (Respondent 2)

Budget restrictions or limitations were also mentioned as partly responsible for deficient coordination mechanisms: *“The budget is also very limited in these settings and limited HRH!”* (Respondent 2); *“Lack of personnel and funds”*. (Respondent 8)

But also limited funding for infrastructures needed to facilitate coordinated surveillance systems, including data sharing platforms: *“Data sharing between prison and public health surveillance systems- prison health is not part of the national health service in Ireland and data is not routinely shared. Providing data requires specific activities through enhanced surveillance which are resource intensive. Routine reporting would require a medical data infrastructure between prisons and the community which is not currently available in Ireland”*. (Respondent 5)

Even though taking a whole of government approach could be a solution to these barriers, the general perception that prison health is not high on the political agenda was mentioned as a clear barrier for collaboration: *“Lack of political interest in prison health”*. (Respondent 6)

Suggestions left to *strengthen the collaboration to establish surveillance systems for acute respiratory infections that are inclusive of prisons*, included:

- 1) The establishment of written data sharing agreements: *“Ongoing collaboration between the National Health Protection Service of Ireland and the Irish Prison Service includes consideration of increased data sharing and collaboration in surveillance and research activities”*. (Respondent 2)
- 2) Education and training for staff: *“Training of all prison medical staff in methodology of the aforementioned collaborative approach. Ensuring that staff across all shifts and prisons are trained to ensure that transfer of data is meticulous”*. (Respondent 1). *“Invitation of experts, conducting trainings and mutual agreement on cooperation”* (Respondent 3). *“Provision or training of staff who will be encoding”* (Respondent 6).
- 3) Incentives for staff: *Effectively make prison health part of national and international public health, with greater recognition of the role of staff and incentives to work within prison health”*. (Respondent 5)
- 4) Obtaining additional financial resources for investing in the systems: *“Finding competent experts who work in prisons and securing funds for their additional work”*. (Respondent 4) or use and share existing resources *“The DOH should have a ready information system to lend the DOJ and DILG to use”*. (Respondent 6)
- 5) Find intelligent ways to ensure data security that may respect individual rights without putting surveillance principles at risk: *“ensure data security”* (Respondent 6).

During the focus group, some additional **suggestions to improve collaboration** have been made by participants. It was stressed that depending on the country, the essential collaboration could be inter-ministerial whereas in others could be intersectoral. Some countries were more developed than others in documenting such agreements, in establishing targets to be met and routinely monitored and in defining accountability mechanisms:

We have quite a formalized collaboration mechanism in England, called the National partnership agreement. These agreements cover five years and agreed to jointly develop priorities for delivering in the relevant setting amongst all partners i So, the signatories are UKHSA, NHS England (who deliver the healthcare services in England), our justice colleagues (the Ministry of Justice and HMPPS who operate the buildings and facilitate healthcare) and our office of health improvement and disparities (which is another partner, a public health agency, covering mental health and substance misuse), and Home Office for

immigration removal centres. We have I think 10 commitments in the newly launched, one of those is around communicable and noncommunicable diseases and the management and preparedness for these, so within this we have a lever to hold our partners to account, and then we have various structures around this partnership agreement to hold those agreements to account. All the commitments are to be delivered within this 5-year period, even though there are some that may be prioritized up front. So, we acknowledge that not all work may be conducted at the same time, as teams are overstretched, but we have monitoring mechanisms to ensure we are making progress in all of them and ultimately that all will be delivered within the timeline. Chantal Edge, UK

It was also clear that it was important for all stakeholders involved to have benefits from agreements established:

In Malta, there are quite a few bilateral agreements with different entities. For these mechanisms to work, all parties involved need to have some clear benefit. So, for instance, public health authorities will benefit from having our data to process... There are other agreements, so for instance, when it comes to medication, in Malta, we have a center with a Central Procurement Systems Unit with whom we have an agreement to ensure there is continuity of treatment so that people may continue to obtain their medication for free, even after discharge. That requires a lot of trust and a health symbiotic relationship...The process usually starts with a meeting (or two) where we discuss what we want to achieve together, then we sit down with our respective lawyers, a draft is released and if we all agree to the draft, then we ask our directors to sign it off. Usually, our bilateral agreements are indefinite. Of course, there are certain criteria and promises that must be honoured & observed by both parties. Chris Cremona, Malta

Unfortunately, we do not have this kind of collaboration with other agencies. The guarantee that the collaboration between MoJ and MoH exists is the fact that people working for the prison system are hired by the MoH (directly from hospitals). So, the collaboration for instance between the hospitals and the prisons is because the same people are working in the two settings. Collaborations with centers for drug addiction (also under MoH) are also crucial because the same people are moving in and out of drug addiction centers and prisons. But the point is that there are no structured collaborations like the one described in England. Nicola Cocco, Italy

The only structured collaboration is with the municipal health services but that is only for TB because prisoners with TB are always treated by the public health physician specialised in TB and nurse of the Municipal Health Services. This agreement is not a contract (like described by others) but it is more like a set of instructions, which is the same across all municipalities. There is a national guideline on how to implement it but then at the local level we define the way of working... Margreet Kamphorst-Roemer, The Netherlands (Kingdom of)

To ensure provision of high-quality medical care and social protection of the prison population, the Medical Department of Ministry of Justice collaborates with international organizations, with NGOs, MoH facilities, private clinics. Due to the lack of some modern examination methods within Penitentiary Services, in some cases, medical doctors of the MoJ resort to MoH facilities to conduct a series of examinations, further treatment, etc. The aim is to ensure the care is equivalent to the medical care provided in the civilian sector. In these cases, with the support of the prison service (in the frames of inter-ministerial cooperation with penitentiary service), these prisoners are brought to the institutions of the Ministry of Health. Nargiz Abdullayeva, Azerbaijan

The funding aspect was also briefly discussed as it seemed to dictate some of the options taken for improving mechanisms in place.

Funding for us is a huge problem because we rely on universal taxation system for public health, so it is an issue of political prioritization more than looking for funding. Because politicians need to decide that it is important to allocate some budget to prisons and this means to be very brave in terms of public opinion and acceptability for the population. Otherwise, there are those collaborations I mentioned with international organizations, university, etc, but that cannot be structured or sustainable. Nicola Cocco, Italy

In the Netherlands, the funding comes from the Ministry of Justice and the funds are there, it's just that it (setting up surveillance systems) is extremely expensive...yes, data collection is considered a priority by the medical department but not by the headquarter of the Ministry of Justice. Margreet Kamphorst-Roemer, The Netherlands (Kingdom of)

During the focus group discussion, ways forwards to improve surveillance mechanisms were also suggested by participants, trying to stress the priority actions to be taken.

Some participants referred to the robustness of the systems in place, including the ability to account for health and justice data unified to enable extractions and meaningful analysis for surveillance purposes:

I think there are multiple things. Being able to access and interrogate the clinical record would help. This will require permission to do that so it may take a while to move forward. In the community there is sentinel surveillance for flu, and I think COVID-19 has now been through the GP clinical records, so it can be done but we just don't have it extended to the prison clinical record which is held separately. So, one thing would be to be able to interrogate that clinical record and ensure that people at the administrative side are entering data correctly, using the same standardized codes, that is a real problem for us. But, then secondly, I think in parallel, it would have to be through the case management system becoming more robust,..., kind of mandatory fields for flagging prison settings, auto populated through unique property reference numbers, so we know they are correct and can identify their details; non free text fields in a way that we can extract this better and do accurate comparisons to the community. Another issue we struggle with is the population denominator, because of the churn through the prison system that is often very hard to know how many people are going through, as this churn is often very high, and that data is held by our prison service colleagues so it not possible for us to calculate proper rates or undertake proper comparisons with the community as we don't always know the denominator of the population we are trying to assess. This is not part of the surveillance system, and this is a key part of the puzzle in allowing our comparison. So, I think it's about being systematic, ensuring the data is accurate and easily extractable and quantifiable, and if we want to get really serious, the prison records alone is going to have more information because we don't laboratory test all our cases, so it should actually have everyone flagged in there as a case for clinical management, so we would have two sorts of the truth to compare. Chantal Edge, United Kingdom

Other participants suggested ways to overcome current data protection issues would be to consider the place of residence as a risk factor:

Being in prisons is a risk factor and we have several data that show this. This is even worse in migration detention centers. The main pitfall to this is data collection. I would like to have a data collector for each prison but in the end, I believe the solution is to have a national surveillance system where incarceration is considered a risk factor, because there is also the migration route. Prisons are a social determinant, just like the housing conditions. Another aspect worth considering is the reason why we need a surveillance

system, and it should be to develop timely responses (e.g., isolation), so testing per se without appropriate actions to follow is not that useful. The main challenge for me is the regional systems that do not necessarily communicate to each other. Nicola Cocco, Italy

The need for resources to ensure quality data and timely updates were also mentioned:

My experience is that you would require someone GPRD trained in charge of updating data, so this person should be employed on a full-time basis and oversee the compliance of updating of medical data by medical staff. When it comes to systems like Tessy, money may not be enough of an incentive, but for instance having a feedback system with educational opportunities may be more interesting, for example, having the duty to update for the clinician about epicenters of disease. Chris Cremona, Malta

Digitalization of health records, ensuring longitudinal follow-up and the possibility to integrate data from multiple sources was also mentioned as crucial for progress in surveillance:

We have been working on a system that should be available hopefully in a few months and that consists of digitalizing all clinical records (offender management system) and then linking it to tags so that the database can be queried to extract e.g., all hep C cases...The record will have the capacity to follow the inmate throughout the incarceration period, from admission, during the prison stay until release and obtaining information from various sources (pharmacy data, lab data, etc). ...

Another thing we are working on is on liaising our point of care machine data with the national system, so in the future if I take a point of care INR, point of care CRP, ABG blood test, this patient data will be uploaded on the patient's respective iSoft system (very similar to the NHS one, at a national level) and public health and hospital consultants can have access to these results Chris Cremona, Malta

There were also respondents to the online survey that anonymously shared their aspirations for national surveillance of Influenza, SARS-CoV-2 and other acute respiratory infections inclusive of prisons. A clear ambition was for prisons to be included in national systems and not to be treated as a separate unit: *"Surveillance in prisons to be included in the national surveillance system".* (Respondent 2)

"I would like the health system to specifically formulate the inclusion of the prison system in the national surveillance system, with the possibility of collecting and quickly sharing data at the local and national level". (Respondent 7)

Even though a desire for integration in national surveillance systems existed, it also became clear that such integration could not impede the ability to use surveillance data to track the infection within the carceral system; and if not possible, the creation of separate systems was also envisaged as a solution: *"Establishment of a digital database for prisons for tracking of local spread, giving us data and other metrics".* (Respondent 4)

Still in terms of integration into national surveillance systems, it was highlighted that mechanisms should be in place to ensure appropriate reporting, including incentives and training for those responsible for data entry and the use of automated systems as much as possible: *"The key barrier is the reporting mechanism between prisons and the national public health system which means data may have to be 'lifted and shifted' from the prison to the surveillance system through reporting processes which can be impacted by levels of staffing, knowledge and training, and this impacts on timeliness and completeness of data".* (Respondent 8)

A feeling of isolation from the world emerged in some of the answers from prison-based clinicians, where a clear request for knowledge sharing networks and access to training and data information sources was made: *“More information sources, trainings for doctors and employees of the penitentiary sector. I also propose to open the international community for communication and exchange of information between doctors of the world, who work for prison (online app)”* (Respondent 1)

Section 3 – Vaccination

There were two independent questions to explore the influenza vaccination strategy for the general population and for the prison population. These were phrased identically so that equivalence could be explored (Fig. 9).

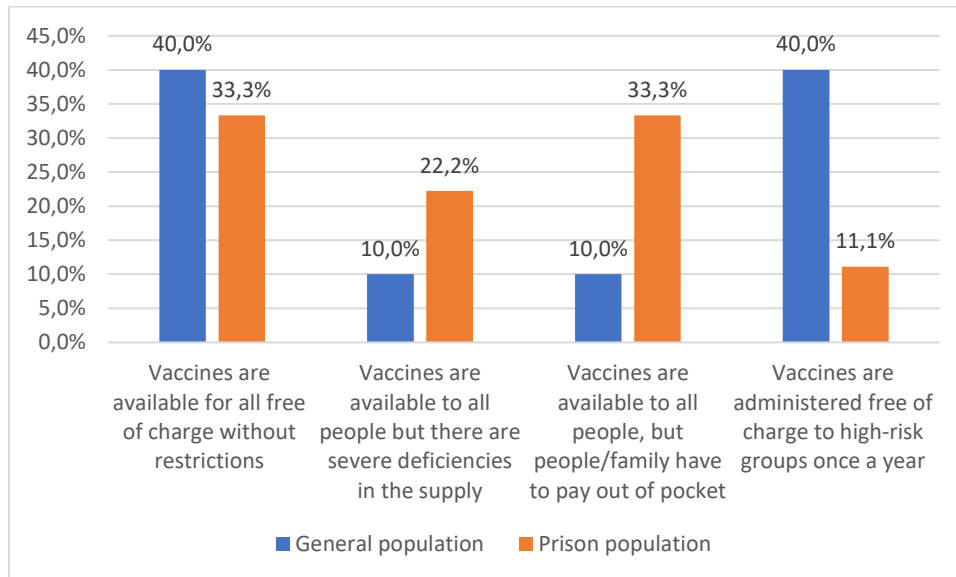


Fig. 9: Comparison of influenza vaccination strategies adopted for the general population and for the prison population

It becomes evident that the consideration for high-risk groups is not the same when considering people deprived of liberty. The only respondent that stated that vaccines are administered free of charge for high-risk groups in prisons, stated that such allocation was made according to the principle of equivalence, i.e., considering the same high-risk groups as for the non-prison population. The four participants referring to vaccines being made available free of charge to high-risk groups in the non-prison population, specified those groups considered (multiple answers possible) (Fig. 10).

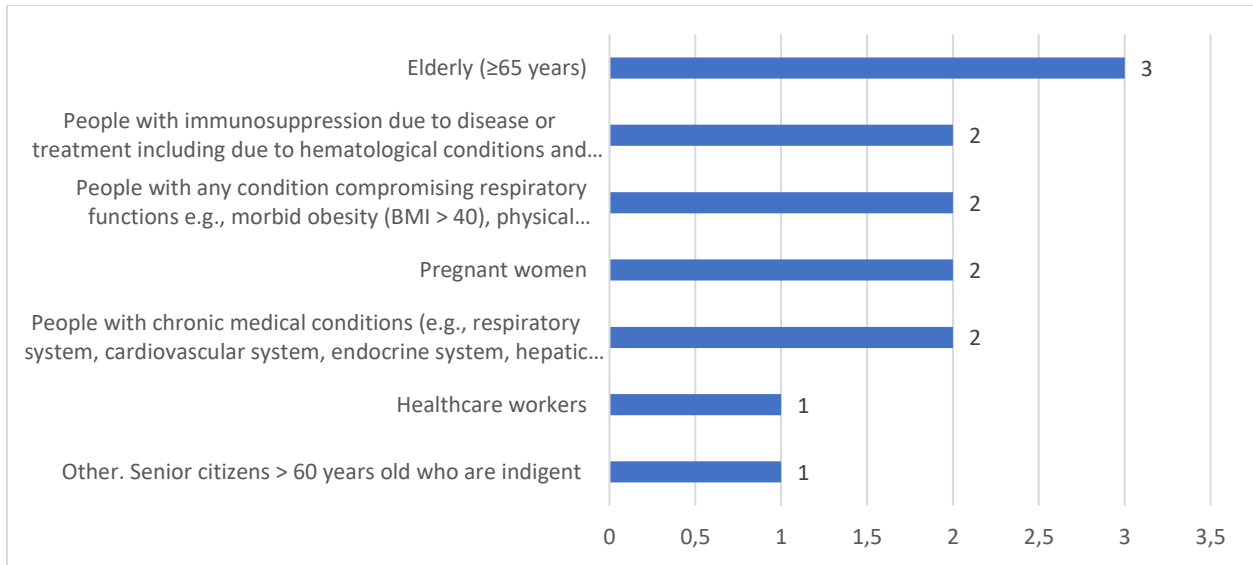


Fig. 10: High risk groups covered by influenza vaccination in the general population

The same approach was followed to explore the SARS-CoV-2 vaccination strategy for the general population and for those in prison, even though responses referred to the period of data collection (August 2023) and do not necessarily reflect the approach taken since the beginning of the pandemic period (Fig. 11).

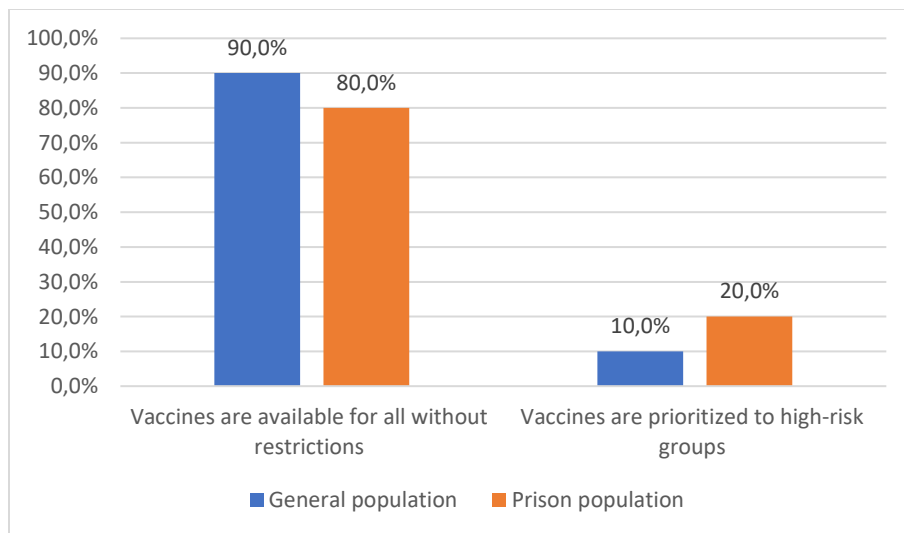


Fig. 11: Comparison of SARS-CoV-2 vaccination strategies adopted for prison and the general population

The high risk groups considered in the general population (n=1) were the elderly (≥65 years), healthcare workers, people with chronic medical conditions (e.g., respiratory system, cardiovascular system, endocrine system, hepatic system, renal system or neurological/neuromuscular conditions), pregnant women, people with any condition compromising respiratory functions e.g., morbid obesity (BMI > 40), physical handicap in children and adults, people with immunosuppression due to disease or treatment

including due to hematological conditions and HIV infection, and people living in congregate settings (e.g., nursing homes; detention centers). In prisons, the principle of equivalence was mentioned (n=2).

Participants were asked if they kept records of how many people were vaccinated in prison every year and ten responded, the most common being for records to be kept both for influenza and for SARS-CoV-2 (Fig. 12).

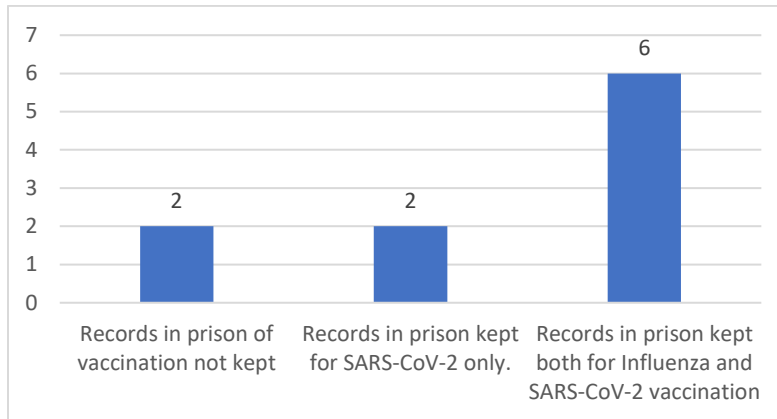


Fig. 12: Immunization records in prisons

There were six participants confirming influenza immunization record keeping, but only five could estimate the coverage reached in previous autumn season (2022). There were eight confirming SARS-CoV-2 immunization record keeping, but only six could estimate the coverage and one responded qualitatively “Very low percentage of the prisoners are vaccinated. The situation is the same with the general population”. The estimates obtained in both cases are presented in Fig. 13.

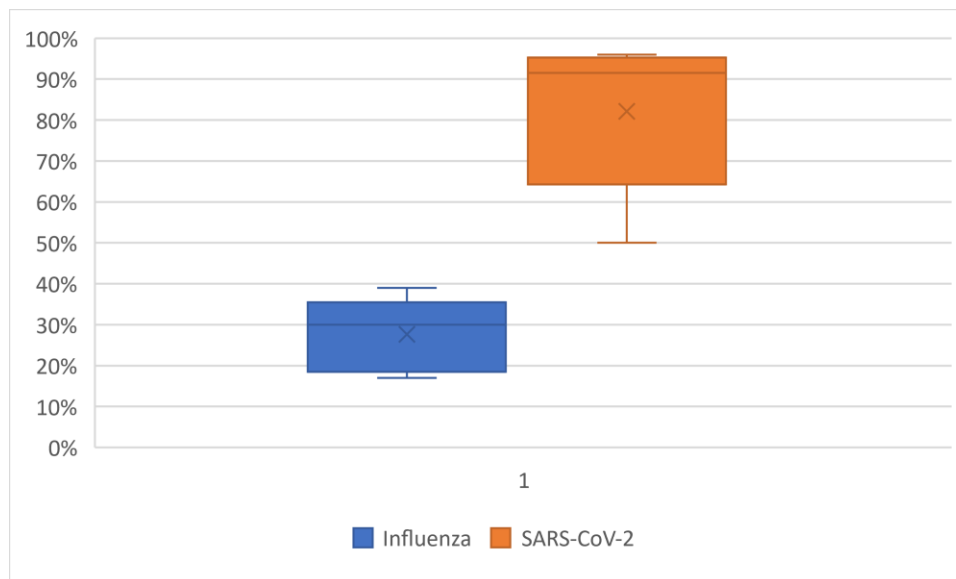


Fig. 13: Estimated immunization coverage in prisons for influenza and SARS-CoV-2 (Autumn 2022)

This last topic was discussed during the focus group, specifically the discrepancy between the vaccination coverage for both respiratory conditions and the potential reasons for it. The main aspects brought up was around hesitancy:

I would say there is the same approach to immunization as there is in the general population, i.e., there is the hesitancy and the fact that people do not consider it useful, not something that really needs to be done. Maybe something has changed with COVID-19 but I see the same trend ...when there is information the coverage rises! To be honest I do not see any other barrier because flu vaccination is offered to all, not just to elderly or to people with chronic conditions, ... Continuous information is the solution... There are also linguistic barriers for those that do not speak the language... But yes, there is much more hesitancy for flu than for COVID-19. Nicola Cocco, Italy

Some strategies to deal with hesitancy, particularly among migrants and ethnic minorities, were given as examples of good practice:

There are also a lot of foreigners in Malta's prison, they represent about 60% of the current inmate population, originating from a multitude of countries, so there are language barriers and cultural barriers. What we have noted that helps is the appointment of an "ambassador". For example, for people from Somalia, we have identified an individual who was quite fluent in understanding English, so that he could explain to his compatriots what the vaccine entails and what are the potential side effects are. Thus, we have appointed individuals who can cooperate and are willing to help address these miscommunications. Chris Cremona, Malta

Education was stressed as an efficient strategy to deal with misinformation and false beliefs:

We do note so many fixed false beliefs as in the case of intravenous drug users who get administered a vaccine and coincidentally develop deep vein thrombosis a few weeks after being given this vaccine. They would much rather attribute the aetiology of the deep vein thrombosis to the vaccine than their florid intravenous drug use. Thus, we are also trying to educate and reverse the fixed false beliefs. Chris Cremona, Malta

Different approaches to uptake of vaccination, including incentives and restrictions, were also provided as possible explanations to the different coverage observed:

Also, for working in prison, inmates needed a green card (certification of COVID-19 vaccine) ... in the end, it meant this was compulsory. Nicola Cocco, Italy

What happened with COVID-19, which might explain this discrepancy (with regards to improved compliance rates when compared to influenza), is that there were better incentives for compliance - for example to travel after release from prison you need a COVID-19 vaccination so there were clear benefits that could be explained. Other incentives that could be applied in the prison setting were the possibility of having physical visits and not just remote (online) visits with relatives. Chris Cremona, Malta

Equity in health care provision

Other extremely interesting points were raised during the focus group, namely the purpose of deprivation of liberty. One of the participants questioned the reason why healthcare provision for those in prison should be treated differently than healthcare provided to those in liberty. "So, for example, I imagine a

prison where a general health practitioner from outside, working in the city for example just goes to prison to follow his patient. I don't understand why prison should be so "detached", unless we accept that people living in prison also deserve different healthcare. I know this is a very broad consideration with ethical issues implied, but I think that in all this discussion around surveillance there is a dilemma behind, that healthcare is different in prison. So, this means that it is not just the deprivation of freedom and then it becomes a bit more difficult to accept from an ethical point of view".

Another aspect deeply related to equity that was introduced by the same participant was the overmedicalization of prisons. *"Ok, because the quality of care of people living in prisons has to be the same, I believe it is extremely important that prisons do not become like entities that are totally independent from the health system. There is this tendency from certain prisons; I know this prison in Milan that has a little surgery room and they have a CT scan... and the hospital is 3 km away, it's not Uganda. So, I am scared when I see these prisons wanting to become very independent because the health system should be outside and inside prison...and this is also the same way I think the surveillance systems should work".* Nicola Cocco, Italy

Conclusions

The European Surveillance System is well established and disseminated in the European region. However, it seems not be known to many people working in prison health, which suggests that little effort has been put on raising awareness among the workforce (both clinicians and working at senior management level) that provides or supervises and monitors healthcare for people in detention places. Considering that this network is so broad and has been created for many years, this option can perhaps be justified because prisons are in general not considered part of the health care system. Another possible reason is that influenza, being a very common disease and only a fraction of the general population being tested every year, if prisons were to be included in surveillance, that would represent an even smaller and insignificant fraction.

One important aspect stressed in the discussion was that in general surveillance systems tend to be deeply associated to the obligation to report, thus tend to be restricted to notifiable diseases. This limits the scope and outreach of surveillance as a public health measure. However, the possibility to change its compulsory nature should only be considered if resources and incentives for regular surveillance are in place.

The evolution of surveillance systems to cover various infectious diseases seems to be an emerging trend, but in prisons, there are still certain conditions being given a separate treatment because of historical reasons, which sometimes justify different procedures in data reporting. It has been suggested that surveillance systems should be comprehensive, both in terms of population coverage (i.e., including prison populations) but also in terms of pathogens (i.e., including both notifiable and non-notifiable diseases and also covering those identified as global targets for elimination). However, others question the relevance of including prisons in national surveillance mechanisms, arguing that prisons are a special, and very closed setting and therefore any surveillance should be more focused on identifying (and therefore controlling) outbreaks, rather than being used to understand the epidemiology of a given disease in the surrounding community. This line of thinking considers that the prison surveillance objective should be covered by notifiable disease surveillance and standard clinical management protocols within prisons, so that infectious disease problems can be identified, and actions taken. This idea in fact means that the benefits of having surveillance in prisons would be for outbreak- and case management purposes and could be useful for describing the burden of disease in these settings to inform policy on control and prevention.

According to the participants in the focus group discussion held in the context of this project, an important limitation of national surveillance systems is the inability to trace back to the origin of the case and the disregard for considering the location of the case as an important risk factor for emergence or aggravation of disease. Currently, most systems in place do not enable extracting data on cases occurring in detention places, mostly due to data protection issues, but also sometimes by the static nature of the system's design. This has led prison services in some countries to develop their own independent systems, which, in our view, duplicates efforts and does not maximize the potential of a surveillance system. Thus, a key recommendation emerging from our participants seems to be to preserve the national approach to surveillance, whilst ensuring that prisons are integrated and part of the system. Any healthcare issues emerging during the life of those that may spend a period of their life in detention or receive care (both inside and outside prison) in this period needs to be recorded. A useful suggestion made was for place of residence (which in a particular moment of life can be a detention place) to be considered as a risk factor, in a similar way that migration status or ethnicity are considered. This approach is particularly important in the context of the developing WHO Global Programme of Work (GPW14) that clearly states as one of the five strategic approaches to "set up action on gender equality, health equity and human rights to leave

no one behind”. It also refers to a specific objective to meet the aim of universal health coverage to “improve equity in service coverage and financial protection”. Therefore, revisiting surveillance systems in the WHO European region to ensure they have the capacity to identify inequity and vulnerable populations would surely continue to this end.

However, we must acknowledge that this report has various limitations, including the limited sample size that responded to the survey and even the relative homogeneity of participants included in the focus group. This implies that the evidence collected is weak to support the idea that prisons should be included in national surveillance systems. This assumption can however be used to foster additional debates. We consider it would be interesting if the UK could host a meeting, eventually involving a round table discussion with representatives of prison surveillance agencies but also representatives of the European Centre for Diseases Control, and if possible representatives of the US Centre for Disease Control, representatives of the Influenza team at WHO regional Office for Europe, and other relevant stakeholders identified by UKHSA, during which the relevance of including prisons in national surveillance mechanisms can be discussed more in depth and involve a wider audience, aiming to reach consensus.

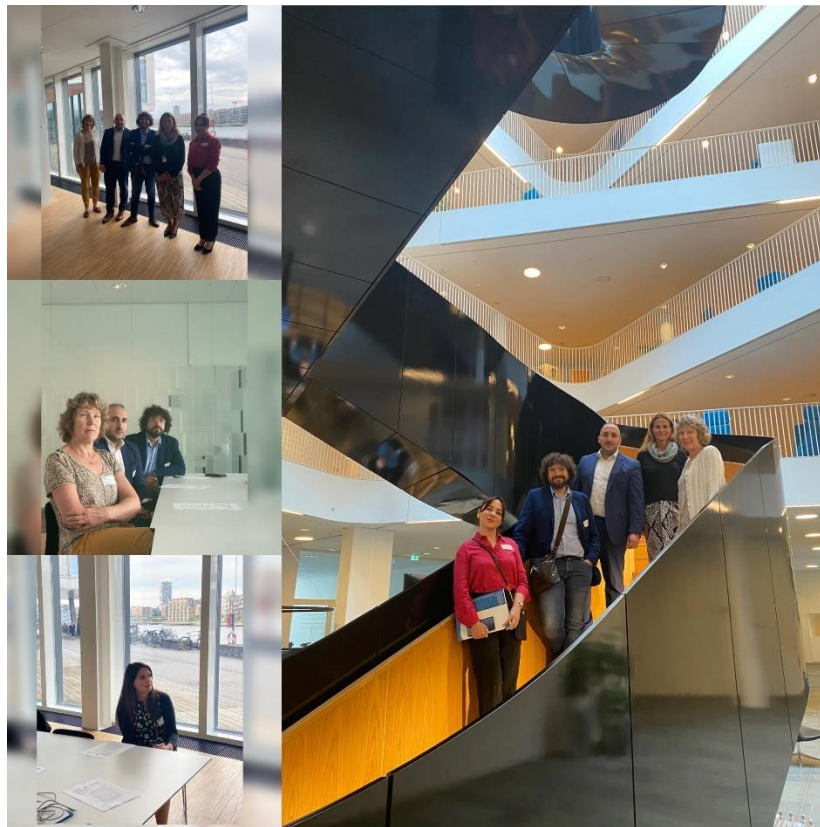


Fig. 14 – Photographs of participants in the focus group discussion

Annex 1

Survey used to collect information on Influenza, SARS-CoV-2 and other acute respiratory infections Surveillance in Prisons

We would like to evaluate how you currently monitor Influenza, SARS-CoV-2 and other acute respiratory infections in prisons in your country and what are the barriers to setting up a prison-based surveillance system.

Please note that you have been identified as a person with a particular interest/contribution to this area. In your daily practice, you may however, have clinical functions, policy/senior managerial functions of surveillance or eventually both. We are interested in both perspectives and have therefore included questions that may be more suitable for clinicians (part 1), others more suitable for people with policy/senior managerial functions in setting up and coordinating surveillance systems (part 2), and others that are possible to be answered by both groups (part 3), so feel free to answer only those questions you think are applicable to your case. We intend to follow-up on the answers by conducting an online focus group in September.

PART 1: SURVEILLANCE IN CLINICAL PRACTICE

(to be completed by clinicians)

1.1 - Can you please explain how currently, in prison, you evaluate if a patient meets a case definition for influenza, SARS-CoV-2 or any other acute respiratory infection?

1.2- Now please consider the following clinical criteria for ILI, ARI and COVID-19 case definitions².

Influenza-like illness (ILI)	Acute respiratory infection (ARI)	COVID-19
Sudden onset of symptoms	Sudden onset of symptoms	Acute onset of fever
AND At least one of the following four systemic symptoms: — Fever or feverishness — Malaise — Headache — Myalgia	AND At least one of the following four respiratory symptoms: — Cough — Sore throat — Shortness of breath — Coryza	AND Cough
AND At least one of the following three respiratory symptoms: — Cough — Sore throat — Shortness of breath	AND A clinician's judgement that the illness is due to an infection	OR Acute onset of ANY THREE OR MORE of the following signs or symptoms: - Fever - Cough - General weakness/fatigue - Headache - Myalgia - Sore throat coryza - Dyspnoea - Anorexia/nausea/vomiting - Diarrhoea - Altered mental status

² [COMMISSION IMPLEMENTING DECISION \(EU\) 2018/ 945 - of 22 June 2018 - on the communicable diseases and related special health issues to be covered by epidemiological surveillance as well as relevant case definitions \(europa.eu\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018D0945)

Think about your previous answer and reflect if you consider your practice systematically takes these criteria into consideration?

Yes

No. Why not?

I do not have enough time in the appointment to undergo such a structured procedure

I was unaware of such criteria

I do not think it is that important to undergo through all that as it is often merely flu

Another reason. Please explain:

1.3 - Do you ever request any additional testing?

No

Yes, sometimes.

Yes. I always require one of the following (tick all that apply to your practice):

Isolation of influenza virus from a clinical specimen

Detection of influenza virus nucleic acid in a clinical specimen

Identification of influenza virus antigen by DFA test in a clinical specimen

Influenza specific antibody response

Diagnostic NAATs, such as RT-PCR

SARS-CoV-2 Antigen-RDT (or rapid diagnostic tests)

1.3.1. - If in 1.3, you have answered “no” or “yes, sometimes”, can you please explain what determines this decision and elaborate on the main barriers:

1.4- Do you record somewhere the test result?

No

Yes. Please explain:

1.5 - Considering that only nominated individuals are authorised to log into TESSy³, do you have such permissions or are you aware of any prison-based GP who has such permissions?

No

Yes.

1.5.1. In case you have answered “yes” to 1.5, can you please nominate this person and provide us with contact details so that we can try and follow-up to obtain additional details.

PART 2: NATIONAL SURVEILLANCE SYSTEMS

(to be completed by respondents with policy/senior managerial functions)

2.1- Do you have a national surveillance system for Influenza, SARS-CoV-2 and other acute respiratory infections?

Yes. Please indicate which type (please select all that exist in your country):

Comprehensive surveillance (based on the reporting of all positive cases)

Sentinel surveillance (based on the reporting of cases identified within the sentinel network established in the country)

No

2.2 – If you have answered yes to 2.1, does this system consider prisons?

³ Note: Data submission to TESSy has to be consistent with Commission Decision 1082/2013/EU and with its implementing acts. Nominated TESSy users will be provided with a specific type of user account, permissions and credentials according to the procedure and principles approved by ECDC. All personal identifiers will be removed from the data set by the Data Submitter prior to uploading case-based data into TESSy.

Yes, always. Please explain:

Yes, sometimes. Please explain:

No

2.3 – If you have answered no to 2.1, do you have a separate surveillance system just for prisons?

Yes. Please indicate which type (please select all that exist for prisons in your country):

Comprehensive surveillance

Sentinel surveillance

No

2.4 – In case you have a surveillance system in your country that covers prisons (always or sometimes), can you please indicate what type of data can you extract from it (tick all that apply):

Number of infection cases

Hospitalizations

Deaths

Sequencing variants

Other information. Please provide details:

2.5 - Is there any surveillance system for Influenza including prisons that you are aware of, even if in another country?

No

Yes.

If you have stated “yes” in 2.5, please indicate which type of surveillance you are aware of; you may chose both, even if in different countries/sites but please specify, for each of the options selected the details requested (i.e., where this system is based (country, region, municipality), prison facility, link, if available)

2.5.1. Indicate which type (please select all that you are aware of, even if in different countries)

Comprehensive surveillance.

Country/Region/Municipality:

Prison facility:

Link:

Sentinel surveillance

Country/Region/Municipality:

Prison facility:

Link:

2.6 – Do you know a similar surveillance system for SARS-CoV-2 and other acute respiratory infections? If yes, please elaborate.

2.7 - If you are not aware of any surveillance system that includes/considers prisons, do you think your public health agency would be open to create one working collaboratively with the prison units?

I think they would certainly not be open to this possibility

I find it very unlikely that they are open to this possibility

I think they would possibly be open to this possibility

I think they would definitely be open to this possibility

2.7.1. Regardless of the answer you have given to 2.7, what do you think are the barriers to this collaborative approach?

2.7.2. Do you have any advice to make this collaborative approach feasible?

2.8 - During the pandemic, some countries have adopted a wastewater surveillance system to monitor SARS-CoV-2 in prisons (e.g., Estonia for SARS-CoV-2; England and Wales for SARS-CoV-2 and Influenza). Do you think this type of surveillance system could be easier to adopt in the criminal justice system to monitor trends in respiratory viruses?

No.

Yes.

Regardless of your answer, please justify your opinion. You can also elaborate on the advantages and disadvantages of this approach for prompting public health action:

2.9 – What are your aspirations for national surveillance of Influenza, SARS-CoV-2 and other acute respiratory infections Surveillance in Prisons?

PART 3: VACCINATION

(suitable for participants with both clinical functions and policy/senior managerial functions)

3.1 - What is the Influenza vaccination strategy for the general population (pick only one)?

Vaccines are available to all citizens free of charge without restrictions

Vaccines are available to all citizens free of charge, but there are severe deficiencies in the supply

Vaccines are available to all citizens, but people have to pay for these themselves

Vaccines are available free of charge for all population covered by insurance/health service (upon prescription and once a year)

Vaccines are free of charge for high-risk groups of the population covered by insurance/health service. Which are considered (tick all that apply)?

Elderly (≥ 65 years)

Healthcare workers

People with chronic medical conditions (e.g., respiratory system, cardiovascular system, endocrine system, hepatic system, renal system or neurological/neuromuscular conditions)

Pregnant women

- People with any condition compromising respiratory functions e.g., morbid obesity (BMI > 40), physical handicap in children and adults
- People with immunosuppression due to disease or treatment including due to hematological conditions and HIV infection.
- Other. Please explain:

3.2 - What is the Influenza vaccination strategy for the prison population?

- Vaccines are available for all free of charge without restrictions and are administered once a year
- Vaccines are available to all people deprived of liberty but there are severe deficiencies in the supply
- Vaccines are available to all people deprived of liberty, but people/family have to pay out of pocket
- Vaccines are administered free of charge to high-risk groups of the prison population once a year Please choose the option that best describes the approach taken.
 - The principle of equivalence is followed
 - Different high-risk groups are defined, when compared to the general population. Please explain:

3.3 - What is the SARS-CoV-2 vaccination strategy for the general population (pick only the one that best describes your reality)?

- Vaccines are available to all citizens without restrictions
- Vaccines are available but there are severe deficiencies in the supply, meaning not all citizens may be vaccinated
- Vaccines are prioritized for high-risk groups of the population. Which are considered (tick all that apply)?
 - Elderly (≥ 65 years)
 - Healthcare workers
 - People with chronic medical conditions (e.g., respiratory system, cardiovascular system, endocrine system, hepatic system, renal system or neurological/neuromuscular conditions)
 - Pregnant women

- People with any condition compromising respiratory functions e.g., morbid obesity (BMI > 40), physical handicap in children and adults
- People with immunosuppression due to disease or treatment including due to hematological conditions and HIV infection.
- People living in congregate settings (e.g., nursing homes; detention centers).
- Other. Please explain:

3.4 - What is the SARS-CoV-2 vaccination strategy for the prison population?

- Vaccines are available to all people deprived of liberty without restrictions
- Vaccines are available but there are severe deficiencies in the supply, meaning not all people deprived of liberty may be vaccinated
- Vaccines are prioritized for administration to high-risk groups of the prison population. Please choose the option that best describes the approach taken.
 - The principle of equivalence is followed
 - Different high-risk groups are defined, when compared to the general population. Please explain:

3.5 - Do you keep records of how many people are vaccinated in prison every year?

- No.
- Yes, for Influenza only.
- Yes, for SARS-CoV-2 only.
- Yes, both for Influenza and SARS-CoV-2.

3.5.1 - If you have answered yes to 3.5 (yes, for influenza only; yes, for SARS-CoV-2 only; or yes, both for influenza and SARS-CoV-2), please indicate the estimate of the vaccination coverage (0-100%) reached last season (2022) in prisons in your country for both conditions.

- Influenza vaccination coverage: _____%

- SARS-CoV-2 coverage: _____%

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