



# Revista Prevenção de Infecção e Saúde

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REVIEW

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## Prevention and control of viral respiratory tract infections in populations deprived of liberty

Prevenção e controle de infecções virais do trato respiratório em populações privadas de Liberdade

Prevención y control de infecciones virales de las vías respiratorias en poblaciones reclusas

Thais Barbosa de Oliveira<sup>1</sup> , Lorrany Santos Rodrigues<sup>1</sup> , Carolyn Victoria dos Santos Silva<sup>2</sup> , Pâmela Jesus dos Santos<sup>1</sup> , Mauricio Yukio Hirata<sup>1</sup> , Jade Christinne da Costa de Paula dos Santos<sup>3</sup> , Maria Beatriz Ruy<sup>4</sup> 

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### ABSTRACT

**Introduction:** One of the main causes of morbidity and mortality in the world, in populations of all age groups are caused by Viral Respiratory Tract Infections (VRTI), however, there are risk groups in which the condition can be aggravated, as the Population Deprived of Liberty (PDL). **Aim:** To identify the scientific production on strategies for prevention and control of outbreaks of VRTI in Populations Deprived of Liberty (PDL). **Outlining:** Medline, Pubmed Central, SCIELO, LILACS and Science Direct databases were used for data collection. **Results:** 387 articles were found. Of these, 20 addressed aspects related to the theme and only 16 presented a description of coping strategies for the infections addressed. The articles were categorized by content analysis by the Bardin method. Five categories were obtained: Monitoring the Health Situation of PDL (94%, n=15), Social Distancing (75%, n=12), Health Education (37%, n=6), Respect for Human Rights (25%, n=4) and Environmental Hygiene (19%, n=3). **Implications:** The implementation of these strategies depends on strengthening health systems, supporting the effectiveness of human rights and including the prison health agenda in the public health agenda not only in pandemic periods.

### DESCRIPTORS

Virus Diseases; Respiratory System; Prisons; Public Health.

### Corresponding author:

Thais Barbosa de Oliveira  
Address: SMHN Quadra 03, conjunto A, Bloco  
1 - Edifício FEPECS  
CEP: 70710-907 Brasília-DF, Brasil.  
Telephone: +55 (61) 2017-1145  
E-mail: [saudedafamilia@escs.edu.br](mailto:saudedafamilia@escs.edu.br)

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## INTRODUCTION

Viral Respiratory Tract Infections (VRTI) are important causes of morbidity and mortality worldwide.<sup>1</sup> Among the more than 200 types of viruses that cause VRTI, the groups of Adenovirus, Coronavirus, Influenza, Parainfluenza, Rhinovirus and Respiratory Syncytial Virus (RSV) stand out.<sup>2</sup> These diseases affect populations in all age groups, but risk groups, such as young children, the elderly, patients with comorbidities (diabetes, obesity, respiratory diseases or chronic cardiovascular diseases, among others) and immunocompromised, are more susceptible to worsening of the clinical picture and, consequently, to death.<sup>3-6</sup> Not all VRTI have the vaccine as a means of prevention, which further vulnerabilizes the health situation of affected populations and can contribute to the occurrence of outbreaks in closed institutions, such as prisons, for example.<sup>7-8</sup>

The prison environment represents a challenge for the control of infectious diseases, because it can be configured as an epicenter due to the existence of overcrowding, lack of ventilation, unhealthy, long stay of inmates, weaknesses in health surveillance actions and access to medical care.<sup>9-10</sup> The records of outbreaks of VRTI in the Population Deprived of Liberty (PDL) were historically associated with the occurrence of pandemics, such as Severe Acute Respiratory Syndrome (SARS) (2002-2006) and H1N1 (2009-2010).<sup>11</sup> In 2020, VRTI outbreak control in PDL proved to be even more emerging due to the Covid-19 pandemic, caused by the new coronavirus (Sars-cov-2).<sup>12-13</sup>

In addition, ethical aspects related to human rights that must be taken into account are included in this discussion. In the possibility of removing fundamental guarantees from PDL, the risk of VRTI can be enhanced, since the basic livelihoods of this population are compromised by the inalienability of rights, in particular, to adequate and healthy food, to health and education. Addressing the subject of VRTI with stratification for PDL is therefore a research ethic posture to promote visibility between the vulnerability of this population and the occurrence of these diseases. Therefore, this study aims to identify the scientific production regarding strategies for prevention and control of outbreaks of viral infections of the respiratory tract in populations deprived of liberty.

## METHOD

This is an integrative review of the scientific literature that sought to synthesize information about the proposed theme, through the following route: definition of question, strategies and definition of terms for the search universe; inclusion and exclusion criteria; orientation for material selection; data analysis and synthesis of results. Definition of question: What does the scientific literature present on the topic of 'Prevention and Control of Viral Infections of the Respiratory Tract in Populations Deprived of Liberty'?

Searches were performed in the Medline, PubMed Central (PMC), Scientific Electronic Library Online (SciELO), Latin American and Caribbean Literature in Health Sciences (LILACS) databases and Science Direct, using search strategies with terms indexed both in the Medical Subject Heading Terms (Mesh Terms -MeSH) developed by the U.S. National Library of Medicine and in the platform of Health Sciences Descriptors (DeCS) of the Virtual Health Library (VHL): 'Prevention & control', 'Virus Diseases', 'Respiratory Tract infections', 'Outbreak', and 'Prison'. These descriptors were chosen because they fit the objectives of the research and should appear in the title or body of the abstract or text of the articles found.

The "exploded" tool was used in search strategies, because it allows checking items that do not contain only the main term, but adjacent to the concept. The Boolean operator "AND" was used in order to restrict the search to articles that presented at the same time each of the terms indicated. The survey covered every year registered on the platforms from the first date of publications related to the topic until August 2020.



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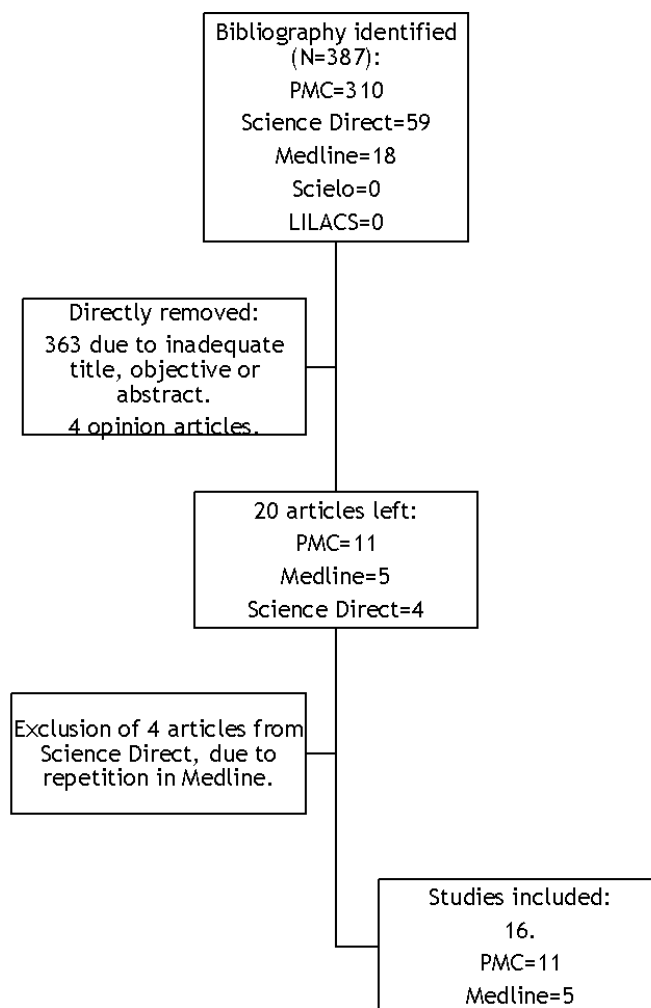
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A total of 387 cataloged studies were identified, among which 310 were in PMC, 59 in Science Direct and 18 in Medline. Although the search terms are also indexed in the DeCS platform, in the SciELO and LILACS databases there were no articles related to the theme. After the identification of the articles, the following inclusion criteria were established: (i) the articles should be from scientific journals, therefore, theses, books and book chapters did not compose this study, and (ii) strategies to prevent the control of VRTI outbreaks in prisons. The exclusion criteria were: (i) not to present the complete summary in the database; (ii) to be published in languages other than Portuguese, Spanish, English, French and Chinese.

After reading the abstracts found in pairs of researchers, it was identified that 364 articles did not deal with the proposed theme and four were opinion articles, leaving only 20 that answered the analysis questionnaire with (i) approach to the proposed theme, (ii) methodology properly described and well structured to meet the proposed objectives and (iii) results compatible with the methodological design of the study. However, among these, it was observed that four articles selected in Science Direct were repeated in the other databases, two in Medline and two in PMC. Finally, 16 articles, of which 11 were in the PMC and 5 in the Medline, met the established criteria (Figure 1).

**Figure 1** - Flowchart of selection of eligible studies.



Source: Created by the authors.

articles as belonging to the categories, discussing the findings in the light of the scientific literature.

From the reading of the 16 articles, a tabulation was prepared with the following information for the survey of bibliometric, methodological and results characteristics: authorship, year of publication, scientific journal, language, country, geographic continent of origin, methodologies, main results, actions and recommendations. Then began the content analysis according to the methodology of Bardin,<sup>14</sup> which necessarily has three phases, such as (i) pre-analysis, in which the articles were organized according to the specific themes they addressed; in (ii) exploration of the material, categories that represented themes in common between the articles; and in the (iii) elaboration of results, with the classification of

## RESULTS

### Bibliometric Characteristics

Among the 16 articles analyzed, 15 (94%) were published in English and one (6%) in Spanish. Articles were found in the following journals: Public Health (n=3), Epidemiology and Infection (n=2), Health Care Infection (n=1), *Revista Española de Sanidad Penitenciaria* (n=1), Journal of Public Health (n=1), Morbidity and Mortality Weekly Report (n=1), Journal of Infection Prevention (n=1), Journal of Correctional Health Care (n=1), BMC Public Health (n=1), Australian and New Zealand Journal of Public Health (n=1), American Journal of Public Health (n=1), Healthcare Epidemiology (n=1) and Journal of Microbiology, Immunology and Infection (n=1).



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We identified publications from 2001 to 2017, with predominance in 2009 (31%, n=5), 2012 (13%, n=2) and 2017 (19%, n=3). In 2001, 2005, 2007, 2010, 2014 and 2015, the frequency was one publication. Only one article was published by one author, the authorships of the other articles were shared. In

addition, there was the participation of the same author in four articles. As for the others, none had more than one publication related to the theme. The authorship, title and objective of study of the articles can be observed in Figure 2.

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**Figure 2** - Authorship, titles and study objectives of the articles analyzed.

Authorship	Title	Objective
Young <i>et al.</i> (2005). <sup>15</sup>	Summer outbreak of respiratory disease in an Australian prison due to an influenza A/Fujian/411/2002(H3N2)-like virus.	To document the investigation of a prison flu outbreak in Australia in 2003.
Awofeso <i>et al.</i> (2001). <sup>16</sup>	Influenza outbreak in a correctional facility.	To report the investigation of a flu outbreak in a psychiatric ward of an Australian correctional unit.
Maruschak <i>et al.</i> (2009). <sup>17</sup>	Pandemic Influenza and Jail Facilities and Populations.	To examine challenges in controlling influenza infections and what can be done to reduce impacts on the prison population and surrounding communities.
Robinson <i>et al.</i> (2012). <sup>18</sup>	Influenza Outbreaks at Two Correctional Facilities – Maine, March 2011.	To report the investigation and control of influenza outbreaks in two correctional facilities in Maine in 2011.
Chen <i>et al.</i> , (2017). <sup>19</sup>	The transmissibility estimation of influenza with early stage data of small-scale outbreaks in Changsha, China, 2005-2013.	To report the estimated flu transmissibility in early stages of small-scale outbreaks in Cangsha, China, 2005-2013.
Besney <i>et al.</i> (2017). <sup>20</sup>	Influenza outbreak in a Canadian correctional facility.	To describe the progression of an influenza outbreak in a Canadian correctional facility.
Levy e Mogg (2009). <sup>21</sup>	Infection control standards for Australian prisons: forgotten, but not forgiving	To conduct a literature review on infection control in prisons.
Spaulding <i>et al.</i> , (2009). <sup>22</sup>	How Public Health and Prisons Can Partner for Pandemic Influenza Preparedness: A Report From Georgia	To report an experience of collaboration and training among health and safety officials in controlling influenza in prison environments.
Guthrie, Lokuge e Levy (2012). <sup>23</sup>	Influenza control can be achieved in a custodial setting: Pandemic (H1N1) 2009 and 2011 in an Australian prison.	To gather evidence from investigation and outbreak control in an Australian prison in 2009 and 2011.
Hoff, Fedesejeva e Mihailescu (2009). <sup>24</sup>	Prisons' preparedness for pandemic flu and the ethical issues.	To explain characteristics of the prison population from a health perspective, as well as the ethical challenges that can arise in a pandemic.
Abera e Adane (2017). <sup>25</sup>	One-fourth of the prisoners are underweight in Northern Ethiopia: a cross-sectional study.	To determine the prevalence and determinants of underweight in adults who have had respiratory infections in six prison areas and three districts in Tigray, Ethiopia.

Bick (2007). <sup>26</sup>	Infection Control in Jails and Prisons.	To conduct a literature review regarding the challenges in infection control in prison environments.
Chao, Liu e Wu (2017). <sup>27</sup>	Control of an H1N1 outbreak in a correctional facility in central Taiwan.	To report the investigation of an outbreak of H1N1 in a correctional unit, as well as the effectiveness of oseltamivir in controlling the disease.
Gomez-Pintado <i>et al.</i> (2010). <sup>42</sup>	Description of the first three notified outbreaks of influenza A (H1N1) 2009 in Spanish prisons	To report the investigation of three H1N1 outbreaks in Spanish prisons in 2009.
Turner e Levy (2009). <sup>43</sup>	Prison outbreak: Pandemic (H1N1) 2009 in an Australian prison	To describe the investigation and response to an H1N1 outbreak in an Australian prison during the 2009 pandemic.
Parcell <i>et al.</i> (2014). <sup>44</sup>	Prison and community outbreak of severe respiratory infection due to adenovirus type 14p1 in Tayside, UK.	To describe the investigation and management of an outbreak of adenovirus infection in a prison, Tayside, 2011.

Source: Created by the authors.

### Methodological Aspects of the Articles

Regarding the methodological aspects of the articles, quantitative descriptive and analytical epidemiological studies of investigation of outbreaks in prisons predominated (75%, n=12), nine of which were descriptive with primary two with secondary data and a cross-sectional epidemiological. When one observes the methodological criteria of “who”, “when” and “where”, it was seen that all quantitative epidemiological studies, both descriptive and analytical, were conducted with a private population and referred to the years in which the registration of pandemics of VRTI was identified, such as 2002, 2003, 2009, 2011 and 2012. Of these studies, four (33%) were conducted in Australia, two (17%) in the United States (USA), two (17%) in China, one (8%) in Canada, one (8%) in Spain, one (8%) in Scotland and one (8%) in Ethiopia.

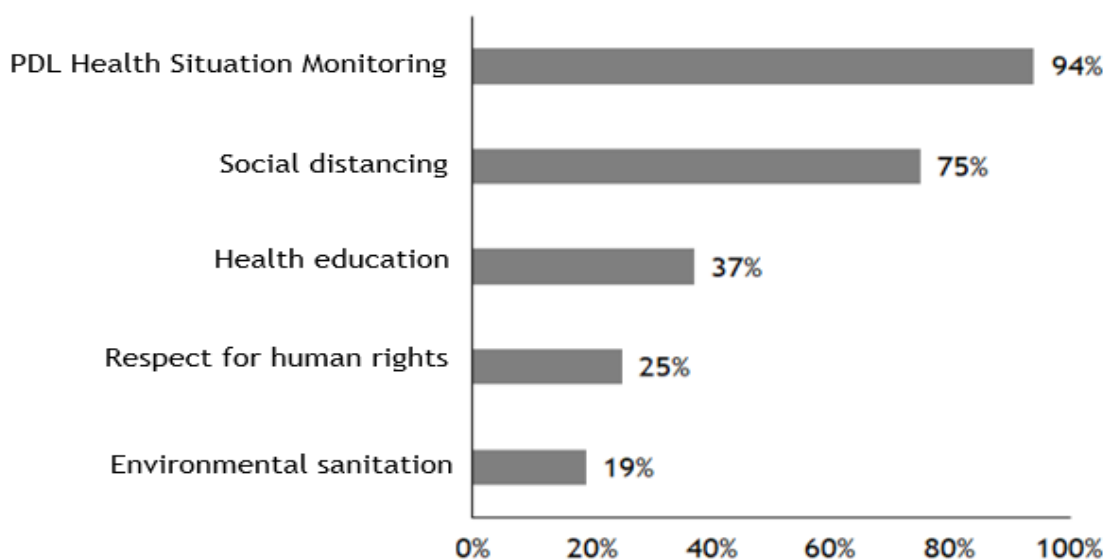
Of the total number of articles, we found four studies (25%) qualitative on the subject, a report of experience of training health and safety

professionals, published in 2009, originated from Georgia; two literature review on the control of infections in prisons, published in 2007, originating in the USA, and another published in 2009, originating in Australia. The fourth qualitative study identified referred to a documentary analysis with qualitative comparison of containment plans between European countries, published in 2009.

### Main Topics Covered

It was observed that most articles (94%, n=15) dealt with VRTI by influenza virus and only one (6%) of VRTI by adenovirus. With regard to the construction of thematic categories by the Bardin method,<sup>14</sup> after exhaustive reading of the articles raised in this study, five categories were created, whose names refer to strategies for prevention and control of RTBI in prison environments. Studies referring to the category “Monitoring the health status of PDL” predominated (94%, n=15), followed by “Social distancing” (75%, n=12) (Figure 3).

**Figure 3** - Percentage distribution of thematic categories of the articles analyzed.



Source: Created by the authors.

## PDL Health Situation Monitoring

Of the 16 articles, 15 (94%) gathered content regarding the monitoring of the health situation of the PDL. In this context, the studies pointed out that, among the main strategies for the prevention and control of outbreaks of VRTI in prison environments, the identification of comorbidities and the monitoring of immunocompromised groups have higher chances of worsening of clinical condition and, consequently, of death. In addition, 5 (33%) studies pointed to monitoring vaccination status and the occurrence of vaccine campaigns in periods of outbreak as effective measures.<sup>17-21</sup>

## Social distancing

This category gathered the content of 12 (75%) articles, with the exception of four studies, where such category was not observed.<sup>18,19,22,23</sup> The articles point to measures directed at the isolation of

with the proposition of reserved cells or a reorganization of prison environments favorable to isolation, without insertion of infected inmates in collective spaces. In addition, most articles (92%, n=11) in this category point to the need to suspend external visits as an effective measure. However, in a study investigating an H1N1 outbreak in an Australian prison in 2009, the results showed that this suspension was ineffective, with the exception that the actions of early identification of VRTI and the drug treatment of interns would be more effective measures.<sup>24</sup>

## Health Education

This theme encompassed results of six articles (38%).<sup>16,18-19,21,23-24</sup> Health education appears in all articles in this category as a necessary action beyond the health sector, with the training of employees and interns in the use of Personal Protective Equipment

(PPE) hand washing and prevention of panic in times of pandemic, in order to avoid mass leakage.

### Respect for Human Rights

This theme grouped the knowledge produced by four articles (25%). One of these studies reports the elaboration of common goals among leaders of public health and the Georgian prison system during the influenza pandemic. These actors dealt with the challenge that the health of PDL can be seen as something not relevant to society, which could contribute to the institutionalized deconstruction of a fundamental right for human life, that is, the right to health.<sup>23</sup> Corroborating this premise, in an explanatory article on the characteristics of the prison population from the perspective of health, the authors found three ethical dilemmas: (i) inconsistency of health care and the right to health of PDL, (ii) interests versus the interest of society, (iii) developing countries and lack of bilateral cooperation to support the PDL. In addition, the authors argued that in pandemics, PDL may be excluded from national contingency plans and that in countries where the right to health is should be refuted the idea that deprivation of liberty would be a synonym for greater acceptance of the risks to life considered inadmissible when at liberty.<sup>25</sup>

If on the one hand part of the studies points to the right to health, others inquire about the human right to adequate food, addressing the relationship between food and the development of VRTI, as in a study conducted in an Australian prison, where it was identified that malnutrition and overweight are risk factors for worsening these diseases.<sup>24</sup> The same result was found in northern Ethiopia, especially the low weight or extreme low weight of PDL. Therefore, the authors' recommendation turned to the need to create public policies for the right to health and adequate and healthy food in prison environments, both in the routine of care, as in moments of pandemic, that can

influence and aggravate the occurrence of outbreaks.<sup>26</sup>

### Environmental Sanitation

The results of three articles (19%) made up this category. In a literature review study for the control of infections in prison environments, some circumstances constitute themselves as risk factors for the development of diseases, such as the lack of routine cleaning of physical spaces and transport used in prison environments, in addition to the impossibility of using disinfection materials in cells due to the risk of fires and burns in inmates.<sup>26</sup> The findings agree with two others who investigated outbreaks in prisons, and pointed out that the lack of disinfection of the environments may constitute if as a promoter of the occurrence of outbreaks of VRTI.<sup>20,28</sup>

## DISCUSSION

This study identified that the year with the highest number of publications was 2009, which is consistent with the pandemic period of "swine influenza", caused by the influenza virus, subtype H1N1.<sup>29</sup> In addition, Australia, followed by the USA and China, percentage of production when compared to the other countries listed in this study. A survey of the spread of HIV in prisons in 75 countries, pointed out that the publicization of disease control occurs in countries that have more health information management of PDL.<sup>30</sup> That is, countries with more information, consequently, have more publications.

A study conducted in order to know the strategies of epidemiological surveillance of PDL in high-income countries, demonstrated that there are basically two types of surveillance: regular monitoring and punctual research. According to the same study, of the fifteen countries evaluated, long-term regular monitoring systems were found only in four, namely Canada, Belgium, USA and Australia.<sup>31</sup> Disparity of measures and lack of communication between countries, as well as the





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lack of identification of risk factors for pandemic diseases in PDL, especially Chronic Non-Communicable Diseases (NCDs), may compromise the formulation of strategies to control outbreaks in prisons.<sup>32-33</sup>

The category “PDL Health Situation Monitoring” predominated in this study and, although the articles found did not discuss the selection of epidemiological profiles by gender or race, a study with this profile highlighted that monitoring the PDL without such a discussion can generate more vulnerabilities to diseases.<sup>34</sup> This finding is consistent with two other studies<sup>35,36</sup>, which indicated that women deprived of liberty may be more vulnerable to food and nutritional insecurity than men. In a study in Mexico City, comparing health conditions between men and women deprived of liberty and the general population, it was highlighted that women deprived of liberty had a higher prevalence of obesity, hypertension and diabetes than men in the same situation.<sup>37</sup>

A study conducted in a French prison showed a higher frequency of obesity in women than men. But both with worsening of this condition in the course of deprivation of liberty.<sup>38</sup> On the other hand, research that focused its analysis on health conditions related to racial disparities in prisons, observed that 51% of black men were more likely to be classified as obese than white men. These findings clarify the relevance of considering gender and race in PDL health monitoring, especially when obesity is considered as a preventable risk factor for NCDs.<sup>32</sup>

It is emphasized that both the scarcity and the excessive supply of ultra-processed foods associated with other health conditions, can expose

PDL to the emergence and worsening of food and nutritional insecurity, as well as contribute to predisposition to conditions such as malnutrition, overweight and emergence and/or worsening of NCD.<sup>39</sup> In this study, it was identified that food was pointed out as a human right that can be weakened and violated in the face of the living conditions of PDL. The human right to adequate food has been established internationally since 1948, through Article 25 of the Universal Declaration of Human Rights.<sup>40</sup>

In many countries, PDL receives inadequate medical care for acute events and/or specific health conditions, with difficulties in monitoring and treating chronic conditions. In addition, there are paradoxes regarding being PDL carrier of chronic diseases, transmissible or not, and having access to fundamental rights.<sup>37,41-42</sup>

These scenarios highlight the need to monitor the health of PDL, considering gender and race cuts, as a tool to break with fragmented care and promote comprehensive, equitable, universal and intersectoral care to PDL. In addition, they evoke respect for the basic human rights of this population, as one should consider the lack of investment in prison health, adequate and healthy food and overcrowding. This is able to influence issues such as social distancing, intersectorality for health education and environmental hygiene also pointed out by studies.<sup>15,42-44</sup> There is no way to elaborate plans to contain outbreaks, containing these measures, in prison settings without viewing prison health as public health.<sup>8</sup> Thus, it is important that PDL be included in the broader public health response agenda.

## CONCLUSION

This study identified the main strategies pointed out by scientific articles in the control of outbreaks of VRTI in PDL, such as monitoring the health situation, social distancing, health education, respect for human rights and environmental hygiene. It was observed that the countries that are pointed out by the scientific literature as holders of information of their PDL are those that present more publications. The implementation of these strategies depends on strengthening health systems, supporting the effectiveness of human rights and including the prison health agenda in the public health agenda not only in pandemic periods. These findings indicate the need to structure a more consolidated dialogue between the health system and the penitentiary, as well as international cooperation between countries

with experience in controlling outbreaks of VRTI and those who do not.

Among the limitations of this study is the fact that the search for articles does not consider clippings of race, gender, age group or other languages besides those mentioned. In addition, the authors of this research are Brazilian and did not identify studies conducted in South America or in Brazil, the country with the largest territorial extension, population and, consequently, prison population, when compared to other countries in the same continent. It is noticed that more investigations are needed to identify the reasons why the country does not have scientific records of VRTI control in PDL, which can sometimes be for successful prevention, or underreporting of cases, even if having a Unified Health System (SUS) - public, universal and integral, which is included in the prison environment.

## RESUMO

**Introdução:** Uma das principais causas de morbidade e mortalidade no mundo, em populações de todas as faixas etárias são causadas por Infecções Virais do Trato Respiratório (IVTR), entretanto, existem grupos de riscos em que o quadro pode ser agravado, como a População Privada de Liberdade (PPL). **Objetivo:** Identificar a produção científica sobre estratégias de prevenção e controle de surtos de IVTR em Populações Privadas de Liberdade (PPL). **Delineamento:** Para a coleta de dados foram utilizadas as bases Medline, Pubmed Central, SCIELO, LILACS e Science Direct. **Resultados:** Encontrou-se 387 artigos. Desses, 20 abordavam aspectos relacionados ao tema e apenas 16 apresentavam descrição de estratégias de enfrentamento das infecções abordadas. Os artigos foram categorizados pela análise de conteúdo pelo método de Bardin. Obteve-se 5 categorias: Monitoramento da Situação de Saúde da PPL (94%, n=15), Distanciamento Social (75%, n=12), Educação em Saúde (37%, n=6), Respeito aos Direitos Humanos (25%, n=4) e Higiene Ambiental (19%, n=3). **Implicações:** A implementação dessas estratégias depende do fortalecimento dos sistemas de saúde, amparo da eficácia dos direitos humanos e inclusão da pauta saúde prisional na agenda da saúde pública não apenas em períodos pandêmicos.

## DESCRITORES

Viroses; Sistema Respiratório; Prisões; Saúde Pública.

## RESUMEN

**Introducción:** Una de las principales causas de morbilidad y mortalidad en el mundo, en poblaciones de todos los grupos de edad son causadas por Infecciones Virales del Tracto Respiratorio (IVTR), mientras tanto, existen grupos de riesgos en los que el cuadro puede ser agravado, como la Población Privada de Libertad (PDL). **Objetivo:** Identificar la producción científica sobre estrategias de prevención y control de brotes de VRTI en Poblaciones Privadas de Libertad (PPL). **Delineación:** Para la recolección de datos fueron utilizadas las bases Medline, Pubmed Central, SCIELO, LILACS y Science Direct. **Resultados:** Se encontraron 387 artículos. De esos, 20 abordaban aspectos relacionados al tema y solo 16 presentaban descripción de estrategias de enfrentamiento de las infecciones abordadas. Los artículos fueron categorizados por el análisis de contenido por el método de Bardin. Se obtuvieron 5 categorías: Monitoreo de la Situación de Salud de la PDL (94%, n=15), Distanciamiento Social (75%, n=12), Educación en Salud (37%, n=6), Respeto a los Derechos Humanos (25%, n=4) e Higiene Ambiental (19%, n=3). **Implicaciones:** La implementación de estas estrategias depende del fortalecimiento de los sistemas de salud, amparo de la eficacia de los derechos humanos e inclusión de la pauta salud carcelaria en la agenda de la salud pública no solo en períodos pandémicos.

## DESCRIPTORES

Virosis; Sistema Respiratorio; Prisiones; Salud Pública.

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## REVIEW

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## COLLABORATIONS

TBO: substantial contributions in data collection, analysis and discussion. LSR: substantial constructions in the analysis and discussion of results, as well as the organization of references. CVSS: substantial contributions in the writing of the article and in the discussion of the data. PJS, MYH and JCCPS: substantial contributions in the discussion of results. MBR: substantial contributions in the research design, methodological and organizational structuring of the study and relevant critical review of the intellectual content. All authors agree and are responsible for the content of this version of the manuscript to be published.

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## AVAILABILITY OF DATA

As this is an integrative review, searches were carried out in Medline, PubMed Central (PMC), Scientific Electronic Library Online (SciELO), Latin American and Caribbean Literature in Health Sciences (LILACS) and Science Direct, using of search strategies with terms indexed both in the Medical Subject Heading Terms (Mesh Terms -MeSH) developed by the U.S. National Library of Medicine and on the Health Sciences Descriptors (DeCS) platform of the Virtual Health Library (VHL): "Prevention & control", "Virus Diseases", "Respiratory tract infections", " Outbreak" and "Prison".

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## CONFLICTS OF INTEREST

There are no conflicts of interest to declare.