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Integration teaching and service in the context of the pandemic of COVID-19: experience report of the praxis of residents of health in epidemiological surveillance

Integração ensino e serviço no contexto da pandemia de COVID-19: relato de experiência da prática dos residentes sanitários na vigilância epidemiológica

ABSTRACT

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Introduction: Initially identified in the city of Wuhan, China in 2019, Coronavirus Disease 2019 (COVID-19), demonstrated itself with a high dissemination power. Due to the potential for contagion, the World Health Organization recommended isolation measures to countries, avoiding agglomerations, reducing the incidence of cases. Vitória de Santo Antão, a municipality located near the Metropolitan Region of Recife, required in this context an essential role of epidemiological surveillance to develop contingency strategies and actions in this pandemic health scenario. **Objective:** To report the experience of health residents working in the epidemiological surveillance sector during the COVID-19 pandemic. **Method:** Experience report carried out by health residents of the Multiprofessional Residency Program for the Interiorization of Health Care to strengthen epidemiological surveillance in the face of the pandemic in the municipality of Vitória de Santo Antão. **Results:** Two forms were created via Google Forms in order to register and monitor cases of influenza syndrome, SRAG and COVID-19 in the municipality. The creation of daily epidemiological bulletins for the dissemination of data was adopted by the health surveillance sector, presenting the most pertinent information obtained from the monitoring of cases of SRAG, COVID-19 and Flu Syndrome of the local population, always comparing with the state and federal scenarios. **Conclusions:** The pandemic scenario brought about a readjustment of residents' activities, imposing on them the challenge of adapting to a new epidemiological context, envisioning a look at the needs of the territories and their learning process, strengthening the surveillance actions during the scenario of pandemic.

KEYWORDS: Epidemiological Monitoring; Coronavirus; Pandemics; Periodicals as Topic

RESUMO

Introdução: Inicialmente identificada na cidade de Wuhan, na China em 2019, a *Coronavirus Disease 2019* (COVID-19) demonstrou-se com um alto poder de disseminação. Devido à potencialidade de contágio, a Organização Mundial da Saúde recomendou aos países medidas de isolamento para evitar aglomerações e diminuir a incidência de casos. Vitória de Santo Antão, município localizado próximo à Região Metropolitana de Recife, neste contexto requereu imprescindivelmente uma atuação da vigilância epidemiológica para elaborar ações e estratégias de contingência nesse cenário sanitário pandêmico. **Objetivo:** Relatar a experiência dos residentes sanitários na atuação no setor da vigilância epidemiológica durante o enfrentamento da pandemia de COVID-19. **Método:** Relato de experiência realizado pelos residentes sanitários do Programa de Residência Multiprofissional de Interiorização de Atenção à Saúde para fortalecimento da vigilância epidemiológica no enfrentamento da pandemia no município de Vitória de Santo Antão. **Resultados:** Foram criados dois formulários via *Google Forms* com o objetivo de registrar

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e acompanhar os casos de síndrome gripal, síndrome respiratória aguda grave (SRAG) e COVID-19 no município. Foi adotada pelo setor de vigilância em saúde a criação de boletins epidemiológicos diários para divulgação dos dados, apresentando as informações mais pertinentes obtidas a partir do monitoramento dos casos de síndrome gripal, SRAG e COVID-19 da população local, sempre comparando com o cenário estadual e federal. **Conclusões:** O cenário de pandemia suscitou uma readequação das atividades dos residentes, ao imprimir sobre esses o desafio de se adequar a um novo contexto epidemiológico, gerando um olhar sobre as necessidades dos territórios e do seu processo de aprendizagem e fortalecendo as ações de vigilância durante o cenário de pandemia.

PALAVRAS-CHAVE: Monitoramento Epidemiológico; Coronavírus; Pandemias; Boletins Informativos

INTRODUCTION

Initially identified in the city of Wuhan, China in December 2019, the *Coronavirus Disease 2019* (COVID-19) has indeed shown to have a high dissemination power, leading to China ready to declare an epidemic state in the first month of its detection¹. In March 2020, the World Health Organization (WHO) endorsed and alerted member states of the pandemic context for the new coronavirus (SARV-CoV-2), with cases of the disease being identified in more than 100 countries².

With the WHO declaration, several epidemiological actions were carried out to disseminate, in a timely and precise manner, the peculiarities of the virus and its behavior. In this aspect, case definitions, laboratory results, source and types of risk, number of cases and deaths, conditions that affect the spread of the disease are included, in addition to the health measures employed, the difficulties faced, and the support needs necessary to respond to the public health emergency of global importance³.

Due to the potential for contagion presented by the new coronavirus, the WHO recommended that countries adopt isolation measures and avoid agglomerations, with the objective of reducing the incidence of cases⁴. To date, no effective drugs have been identified to treat the infected, so the reinforcement of the maintenance of adequate hygiene measures, the use of masks and, mainly, social isolation have been the most effective and safest measures of action to contain the contamination advance⁵.

The first case of the disease in Brazil was notified on February 26, 2020 in São Paulo, and in Pernambuco (PE), the first records were made on March 12th. By the end of Epidemiological Week 34, on August 22, the country had registered 3,582,362 cases, while the state of Pernambuco reached 118,027 accumulated cases⁶.

In the municipality of Vitória de Santo Antão (PE), the first case of COVID-19 was identified on April 15, 2020. Because the municipality is located close to the capital of Pernambuco, whose context was the concentration of the vast majority of confirmed cases and because it has a great productive and commercial potential with a constant flow of people from several surrounding municipalities, the epidemiological action was essential to develop timely actions and contingency strategies in this sanitary scenario⁷.

With the recognition of the COVID-19 pandemic process, Brazil had to adopt measures of social distancing that affected the

functioning of various segments of society, including education and health. These measures resulted in the suspension of face-to-face activities by educational institutions and also generated direct consequences for the functioning of the integrated programs of the Family Health Strategy, which includes the Multi-professional Residency Program for Internalization of Health Care (PRMIAS), which, that, in that context, it would have to reorganize the work process to develop its activities and continue serving the population⁸. Thus, the objective of this study was to report the experience of health care residents working in the sector of epidemiological surveillance during the fight against the COVID-19 pandemic in the municipality of Vitória de Santo Antão.

METHOD

This is an experience report on the reorganization of the praxis of the work process, between March and July 2020, in the midst of the COVID-19 pandemic, by residents of the PRMIAS of the Academic Center of Vitória, Federal University of Pernambuco (CAV/UFPE) in the municipality of Vitoria de Santo Antão.

The municipality of Vitória de Santo Antão is located in the forest zone of the state of PE. It had an estimated population of 138,757 inhabitants in 2019, according to the Brazilian Institute of Geography and Statistics⁹. The municipality has a health network made up of 40 Basic Health Units, with a coverage of 94.41% of Primary Care, five Expanded Centers for Family Health and Primary Care, a Psychosocial Care Center, two centers of the Health Academy Program, among other health services/establishments in the municipal network¹⁰.

In March 2020, the municipality, together with the CAV/UFPE, welcomed the new group of residents from PRMIAS. In all, the municipality welcomed a group of 16 new residents composed of professionals graduated in: collective health, nursing, psychology, nutrition, physical education, and speech therapy. After the reception, the residents were introduced to the city's care network and began the process of integration with the family health teams (FHT) and the Expanded Center for Family Health and Primary Care (NASF-AB).

The recognition of the seriousness of the COVID-19 pandemic influenced the suspension of the activities of educational institutions and health services. These factors, associated with the lack of personal protective equipment (PPE), led to the



suspension of face-to-face activities by PRMIAS residents. The interruption of the residents' work lasted a few days, while new work processes were discussed and planned in which these professionals could act.

The first group of PRMIAS residents to resume face-to-face activities were the sanitarians. On March 23, 2020, collective health residents were included in the municipality's epidemiological surveillance (ES) team to reinforce actions and activities to fight the pandemic.

RESULTS AND DISCUSSION

The challenge of integrating the epidemiological surveillance team in the context of a pandemic

The insertion of health care residents in the ES in the city of Vitória de Santo Antão was carried out with the aim of contributing to the monitoring of cases of flu syndrome, severe acute respiratory syndrome (SARS) and COVID-19.

With the sudden change in the territory of operation, it was necessary to reorganize the work process, thinking not only of a new pandemic scenario, but also of the performance of residents leaving the gateway of the health network (Primary Health Care) to the central strategic management level (ES coordination).

This change gave rise to new demands, such as: insertion and integration in the health surveillance team to organize the work process; reorganization of flows (notifications for opportunity of case records, organization of databases); analysis and feedback on the notification process and adjustments in order to avoid failures and duplication of notifications, and, in these aspects, effective communication improvement between primary care and health surveillance. Finally, daily production of epidemiological bulletins about the new emerging disease to support quick

and strategic action in the contingency planning of public health emergencies at the local level.

Recognizing scenarios and organizing work processes

As a first measure of organization of work processes, two forms were created via *Google Forms* in order to register and monitor cases of flu syndrome (Figure 1), SARS, and COVID-19 (Figure 2) of the municipality's residents. The idea was presented to the Health Surveillance Management (HSM) and to the municipality's ES coordination, aiming to operationally agree on the use of online electronic forms, which were based on the *Fast Track* of the Coronavirus Clinical Management Protocol (COVID-19) in Primary Health Care¹¹, and in the Individual Record Form - Cases of Hospitalized Severe Acute Respiratory Syndrome, of the Influenza Epidemiological Surveillance Information System (Sivep-Influenza), version of 07/27/2020¹².

Data referring to the flu syndrome spreadsheet are recorded from the notifications of users with mild respiratory symptoms in public and private health units (family health unit, hospitals, outpatient units in units with populations deprived of liberty and in the productive sectors, long-term care institutions for elders - ILPI). The registration and typing of these data are carried out by the registration unit when the cases are identified. However, in the case of SARS and COVID-19 data, the form is completed by residents and ES professionals using the SARS notification forms.

Due to the low supply of PPE, caused by the context of the high demand of the pandemic for the use of professionals on the front line, several protection strategies were adopted¹³. Among them, the creation of online notification forms to reduce the risk of contact with contaminated material (paper, plastic folders, etc.) and possible infection by handling them. It is estimated that the virus can remain up to 24 hours on paper and up to 72 hours on plastics¹⁴.

← → ↻ 🔒 docs.google.com/forms/d/e/1FAIpQLSeIqCpdCLzZA6Z_vP3SgFOI0-jGfPp2bzWKKKNy8v3zP5o8pA/viewform 🔍 ☆ 📄 🛠️ ⓘ

SRAG - Monitoramento Covid-19

VIGILÂNCIA DE INFLUENZA POR MEIO DE SRAG-INTERNADA OU ÓBITO POR SRAG:
=> indivíduo de qualquer idade, INTERNADO com SÍNDROME GRIPAL e que apresente Dispneia OU Saturação de O₂ <95% OU Desconforto Respiratório. Deve ser registrado o óbito por SRAG independente de internação.

Captação de Registro de SRAG (Covid-19):

- Planilha encaminhada pela I Geres
- GAL (Gerenciador de Ambiente Laboratorial)
- Rumores, desde que conferido pelas duas fontes acima
- Monitoramento diário

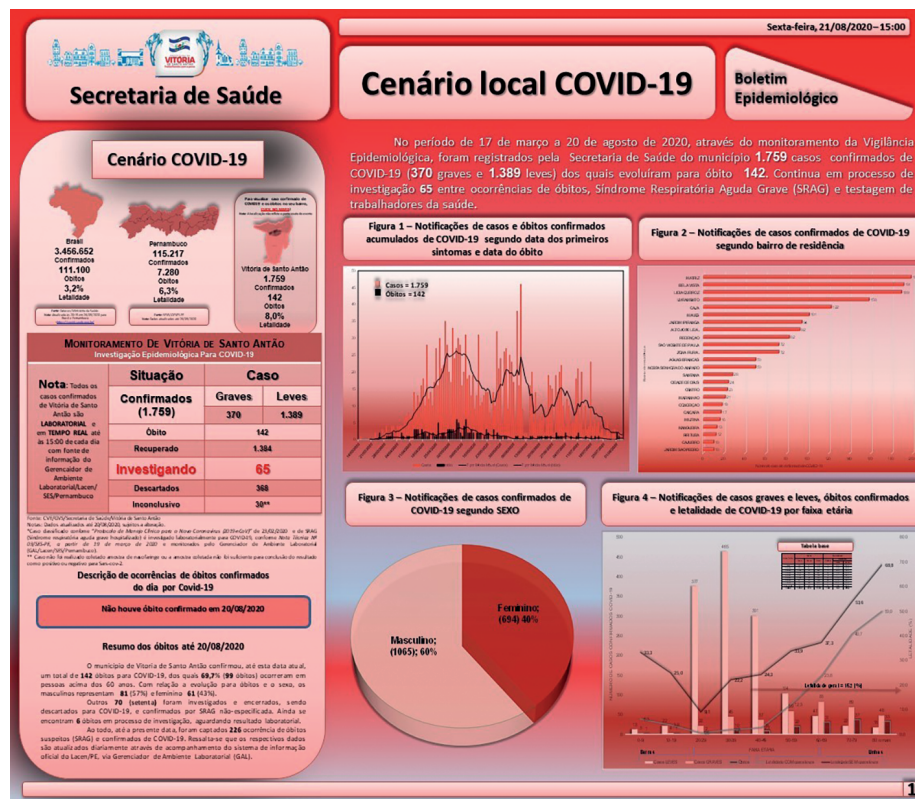
Caso de SRAG?

Escolher ▼

✎

Source: Epidemiological Surveillance Coordination/Health Surveillance Management/Vitória de Santo Antão Health Department, 2020.

Figure 1. Clipping from the online electronic form based on the Individual Record Form - Cases of Hospitalized Severe Acute Respiratory Syndrome.



Source: <https://www.prefeituradavitoria.pe.gov.br/site/categoria/covid-19/>.

Figure 2. Part 1 of the epidemiological bulletin with data from COVID-19 in the municipality of Vitória de Santo Antão (PE).

The municipality does not have the Electronic Health Record (EHR), thus, the flow of notifications depends on the handling of printed material and transport logistics, which can be a source of contagion, elucidating the importance of adopting the online notification form suggested and created by residents.

The EHR is already seen in some environments, commonly called the Electronic Medical Record (EMR) or Electronic Patient Record (EPR). The use of the EHR can provide a solid and relevant information base for organization and decision-making based on the analysis of the content present in your records¹⁵. However, its implementation or implementation assumes a complex character, which has led to the incorporation of Improvement Science so that this process can occur in accordance with the needs of services¹⁶.

The substitution of paper graduation for the use of online forms is a practice already adopted in some departments¹⁷, including health services. However, this process requires time and adaptation from the professionals involved in the process, as it requires a cultural change¹⁸.

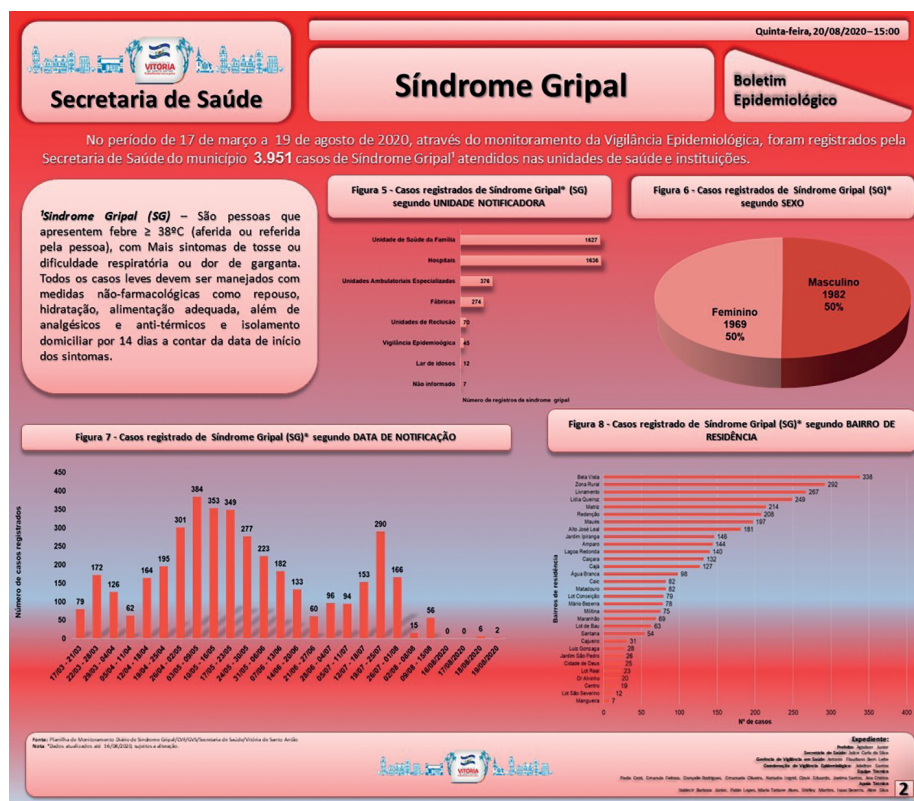
Residents organized themselves in pairs to follow the records from the online bank, crossing the information from the notifications with the records made in the online systems of the Health Information System for Primary Care (SISAB)¹⁹ and Laboratory Environment Management System (GAL)²⁰ to remove inconsistencies, duplications, and collect laboratory test results for COVID-19.

Another strategy adopted was the use of monitoring and active search for suspected cases by telephone. Based on the notifications made by the units of patients with flu-like symptoms, residents and ES professionals made periodic calls to monitor the evolution of symptoms and find out if relatives, co-workers, or neighbors were showing flu symptoms and, thus, could perform notification of cases.

The data collected from the notifications were used to build the epidemiological bulletin, which takes place in three stages. The first, with updated data referring to notifications of flu syndrome, SARS, and COVID-19. After updating the spreadsheets, the second stage was performed, the data analysis in Microsoft Excel software, using descriptive statistics procedures. Finally, the third stage was the organization of results and finalization of the bulletin, with the results obtained presented in graphs and tables (Figure 2).

The municipality did not have bulletins updating the epidemiological situation for the population. They were adopted by the surveillance coordination after the start of the pandemic, being implemented with the help of residents.

The bulletins are produced daily and present the most pertinent information obtained from monitoring cases of SARS, COVID-19, and flu syndrome. The following information is presented: positive cases of COVID-19 according to sex, age group, degree of symptoms (mild or severe), neighborhood of residence, date of



Source: <https://www.prefeituradavitoria.pe.gov.br/site/categoria/covid-19/>.

Figure 3. Part 2 of the epidemiological bulletin with data on flu syndrome in the city of Vitória de Santo Antão (PE).

first symptoms; municipal lethality rate; number of cured and deaths by COVID-19; investigated cases that were discarded for COVID19; cases under investigation and inconclusive cases. Information regarding cases of flu syndrome is also presented according to: gender, reporting unit, date of notification, and neighborhood of residence (Figure 3).

The production of bulletins is extremely important and is considered by the Ministry of Health as Health Surveillance actions²¹. Furthermore, timely collection of data, their analysis, and subsequent dissemination are fundamental strategies for guiding health actions based on a situational diagnosis, effective in the reality of the territory in which one wishes to act²².

CONCLUSIONS

The pandemic scenario brought about a readjustment of the residents' activities, imposing on them the challenge of adapting to a new reality, not forgetting the needs of the territories and their learning process. The opportunity to work with the ES in

monitoring suspected and confirmed cases of COVID-19 proved to be timely and of great value in building the knowledge and actions of residents.

The experience with the ES allowed residents to expand their critical view and its importance for health education. With the return of residents to the NASF-AB, strengthening strategies between Primary Care and Health Surveillance are being structured so that the work that was started is expanded to the territory where the FHT operate, expanding actions to fight the pandemic in a continuous way, relying on the help of residents as a link between services.

Furthermore, the analysis of data and its dissemination through epidemiological bulletins proved to be necessary to keep the population informed about the numbers of the disease in the municipality and to guide the strategies for coping with COVID-19 for municipal management. Emphasizing that this is a low-cost information strategy, but extremely effective in communicating and subsidizing actions based on its surveys.

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Author's Contributions

Bezerra INM, Silva AV, Farias SJM, Sousa FOS - Conception, planning (study design), acquisition, analysis, data interpretation, and writing of the work. Oliveira MHM, Araújo AA, Santos TM, Silva DF, Leite AFB - Acquisition, analysis, data interpretation, and writing of the work. All authors approved the final version of the work.

Conflict of Interests

The authors inform that there is no potential conflict of interest with peers and institutions, politicians, or financial in this study.



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