EXPERIENCE REPORT | RELATO DE EXPERIÊNCIA

State Epidemiological Surveillance in combating the COVID-19 pandemic in Brazil: an experience report

Vigilância Epidemiológica estadual no enfrentamento da pandemia pela COVID-19 no Brasil: um relato de experiência

Vigilancia Epidemiológica estatal en el combate a la pandemia por COVID-19 en Brasil: informe de experiência

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Abstract

Objective: to systematize the experience of the state of Espírito Santo in facing COVID-19, based on the experience as a manager and operational team of the state epidemiological surveillance, in the period from March 2020 to March 2021. **Method**: this is a descriptive study, of the experience report type. The data were obtained through official channels, fed by a health notification system adopted by the State of Espírito Santo and by spreadsheets sent daily by health establishments. **Results**: it was observed that the approximation between state and municipal management facilitated the implementation of the instituted guidelines and the consolidation of the measures in the entire territory of the state of Espírito Santo. **Conclusion**: it is concluded that the developments required in the management of the pandemic highlight the importance of Health Surveillance and the strategic role of the Epidemiological Surveillance in the control of the pandemic, and in the decision making and direction of human and financial resources.

Keywords: Coronavirus infections; Public Health Surveillance; Epidemiological monitoring; Health information management; Health management.

Resumo

Objetivo: sistematizar a experiência do estado do Espírito Santo no enfrentamento da COVID-19, baseando-se na vivência enquanto equipe gestora e operacional da vigilância epidemiológica estadual, no período de março de 2020 a março de 2021. **Método:** trata-se de um estudo descritivo, do tipo relato de experiência. Os dados foram obtidos por meio de canais oficiais, alimentados por um sistema de notificação em saúde adotado pelo estado do Espírito Santo e por planilhas enviadas diariamente pelos estabelecimentos de saúde. **Resultados:** observou-se que a aproximação entre a gestão estadual e municipal facilitou a implementação das orientações instituídas e a consolidação das medidas em todo território capixaba, vale salientar que outros órgãos governamentais auxiliaram nesse processo. **Conclusão:** os desdobramentos exigidos na gestão da pandemia evidenciam a importância da Vigilância em Saúde e o papel estratégico da Vigilância Epidemiológica no controle da pandemia, e na tomada de decisão e direcionamento de recursos humanos e financeiros.

Palavras-chave: Infecções por coronavírus; Vigilância em Saúde Pública; Monitoramento epidemiológico; Gestão da informação em saúde; Gestão em saúde.

Resumen

Objetivo: sistematizar la experiencia de estado de Espírito Santo en el enfrentamiento del COVID-19, a partir de la experiencia como equipo gestora y operacional de la vigilancia epidemiológica estatal, de marzo de 2020 a marzo de 2021. **Método:** se trata de un estudio descriptivo, tipo relato de experiencia. Los datos se obtuvieron a través de canales oficiales, alimentados por un sistema de notificación sanitaria adoptado por el Estado de Espírito Santo y por planillas enviadas diariamente por los establecimientos de salud. **Resultados:** se observó que la aproximación entre la gestión estatal y municipal facilitó la implementación de orientaciones instituidas y la consolidación de medidas en todo el territorio del estado de Espírito Santo, cabe mencionar que otras agencias gubernamentales asistieron en este proceso. **Conclusión:** se concluye que los desdoblamientos exigidos en la gestión de la pandemia evidenciaron la importancia de la Vigilancia en Salud y el rol estratégico de la Vigilancia Epidemiológica en el control de la pandemia y en la toma de decisiones y direccionamiento de recursos humanos y financieros.

Palavras clave: Infecciones por coronavírus; Vigilancia en Salud Pública; Monitoreo epidemiológico; Gestión de la información en salud; Gestión en salud.

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INTRODUCTION

Coronaviruses are old acquaintances of human civilization, historically responsible for mild influenza manifestations. In the last two decades two subtypes have been linked to major epidemics: severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS)[1].

Recently, the world has been faced with the emergence of the newest coronavirus, SARS-CoV-2, or COVID-19. Originating in Wuhan, China, SARS-CoV-2 is considered to be a zoonotic pandemic[2]. It is a single-stranded ribonucleic acid from the order Nidovirales of the family Coronaviridae[3], so called because its microscopic appearance resembles a sun crown[4].

It has a great affinity for the lower respiratory tract, manifesting itself quite frequently in the form of pneumonia[5], cough, dyspnea, headache, hyperthermia, rhinorrhea, ground-glass opacity[6], anosmia, dysgeusia[7], conjunctivitis[8], skin changes[9].

In humans, the virus has a high degree of transmissibility, and can infect children and adults. It affects men, the elderly, and people with comorbidities more severely[10]. Coronavirus infections are often oligo-symptomatic or asymptomatic in younger individuals[11], which causes great concern, after all, the viral load of asymptomatic patients seems to be similar to the load of symptomatic patients, suggesting that the potential for transmission is also similar[6], requiring permanent and behavioral strategies, political articulations and mobilization of the whole society.

Among the key actions for the knowledge, detection and prevention of any change in the determining and conditioning factors of individual or collective health[12], as well as facing public emergencies, such as outbreaks, epidemics and pandemics, there is the work of the Epidemiological Surveillance, which, within the context of Health Surveillance, has a great capacity of organization and articulation, providing emergency and assertive answers, aiming at reducing the negative impacts to society.

The results, even if partial, seem to influence the numbers of registered cases and deaths. In Brazil, COVID-19 continues to victimize thousands, currently occupying the third place in confirmed cases, with 14,856,888 notifications, behind only the USA and India, and taking 2nd place globally in number of deaths 411,588[13].

The state of Espírito Santo is located in the Southeast region of the country and is the smallest and least populated state in the region, with a population of 4,064,052 inhabitants[14], unevenly distributed in 78 municipalities, mostly small and medium-sized. Among the municipalities, 39 have less than 20 thousand inhabitants, 27 are in the range of 20 to 50 thousand inhabitants, and only ten municipalities have a population larger than 100 thousand inhabitants.

This study aims to systematize the experience of the state of Espírito Santo in the joint confrontation of global health and socioeconomic issues of the population of Espírito Santo, based on the management of health information and on the experience as a manager and operational team of the state Epidemiological Surveillance during the pandemic caused by COVID-19, from March 2020 to March 2021.

METHODS

This is a descriptive study, of the experience report type, with a focus on the work process and strategic management of public policies to confront the pandemic. It was based on the experience of part of the management and operational team of the state Epidemiological Surveillance (Health Situation Room - COVID-19, Emergency Operations Center, and Command and Control Center of the State of Espírito Santo).

The period of analysis of the strategies adopted was established as March 2020 to March 2021. This interval was chosen taking into consideration the implementation of indicators and work processes, as well as the institution of the Command and Control Center and the Health Situation Room - COVID-19 of the state of Espírito Santo. The content presented integrates the daily life of the authors of the manuscript, masters and doctors in science, collective health and epidemiology, who actively participated in the entire process, since they are part of the management team. The data was obtained through official channels (COVID-19 Panel of the state of Espírito Santo, Espírito Santo State Health Secretariat website), fed by the e-SUS Health Surveillance (E-SUS.VS) which is the health notification system adopted by the state of Espírito Santo in 2020, as well as by spreadsheets sent daily by the health establishments.

The Health Regionalization Master Plan for pandemic management was also considered, a strategy that raised the promotion of health systems and efficiency, making intergovernmental relations more cooperative, aiming to guarantee integrality and equity in health care, as well as the reduction of social inequalities, in which the state of Espírito Santo was divided into four Health regions, as follows North (with 14 municipalities: Água Doce do Norte, Barra de São Francisco, Boa Esperança, Conceição da Barra, Ecoporanga, Jaguaré, Montanha, Mucurici, Nova Venécia, Pedro Canário, Pinheiros, Ponto Belo, São Mateus, Vila Pavão), Sul (with 26 municipalities: Alegre, Alfredo Chaves, Anchieta, Apiacá, Atilio Vivacqua, Bom Jesus do Norte, Cachoeiro de Itapemirim, Castelo, Divino de São Lourenço, Dores do Rio Preto, Guaçuí, Ibitirama, Iconha, Irupi, Itapemirim, Iúna, Jerônimo Monteiro, Marataízes, Mimoso do Sul, Muniz Freire, Muqui, Piúma, Presidente Kennedy, Rio Novo do Sul, São José do Calçado, Vargem Alta), Metropolitana (with 20 municipalities: Afonso Cláudio, Brejetuba, Cariacica, Conceição do Castelo, Domingos Martins, Fundão, Guarapari, Ibatiba, Itaguaçu, Itarana, Laranja da Terra, Marechal Floriano, Santa Leopoldina, Santa Maria de Jetibá, Santa Teresa, Serra, Venda Nova do Imigrante, Viana, Vila Velha, Vitória) and Central (with 18 municipalities: Águia Branca, Alto Rio Novo, Aracruz, Baixo Guandu, Colatina, Governador Lindenberg, Ibiraçu, João Neiva, Linhares, Mantenópolis, Marilândia, Pancas, Rio Bananal, São Domingos do Norte, São Gabriel da Palha, São Roque do Canaã, Sooretama, Vila Valério)[15].

RESULTS AND DISCUSSION

With the objective of having a decision-making process based on technical parameters, the Espírito Santo state Government created the Command and Control Center (CCC) COVID-19 on March 21st, 2020, composed of the Military Fire Department, Espírito Santo State Health Department (SESA), Civil Defense, Jones dos Santos Neves Institute (IJSN), Espírito Santo Federal University (Ufes) and Espírito Santo Federal Institute (Ifes)[16].

To assist in coping and health management measures, the CCC members developed a strategic management tool observing factors associated with vulnerability and threat from intrinsic and extrinsic variables so that the state would pioneer risk mapping strategies (Figure 1) and qualified measures in observing the individual peculiarity of each municipality, systematically bringing weekly updates on the risk classification of its municipalities[16].

To build the Risk Management Map of COVID-19 in the state of Espírito Santo, a matrix was prepared that contains the parameters and criteria defined according to the technical assessment of the experts who compose the CCC (Figure 2).

On January 24, 2020, SESA activated the Emergency Operations Center (COE-ES), coordinated by the Undersecretariat for Health Surveillance (SSVS), to manage the prevention and control actions of the new Coronavirus, later formalized by Ordinance No. 028-R, of March 2, 2020[17], composed of representatives from various bodies, namely: the Council of Municipal Health Secretaries - COSEMS-ES; the Coordination of Epidemiological Surveillance of the municipalities of Greater Vitória; the State Health Council; the hospitals defined as reference in the treatment of COVID-19 in the different health regions; the various sectors of the SESA; as well as the SESA's Communications Office - ASSCOM[18]. This is a working space created to operate and plan responses at the state and municipal level, such as coordinating information and resources; ensuring information sharing and situational awareness; making strategic and operational decisions; implementing various plans and procedures.

For direct management of public health surveillance (HS) information and assessment of the pandemic situation in the state, it was instituted on March 13, 2020, through Decree #4593-R[19], The "Health Situation Room - COVID-19", along with its formation, work groups were designated with distinct focuses to speed up the processes, divided into four areas, namely: deaths, hospitalizations, exams and transparency.

The "death audit team" is responsible for closing the cases that evolved to death by COVID-19, dedicating itself to the process of epidemiological investigation, using the E-SUS.VS notification system, spreadsheets received from hospitals throughout the state, direct contact with the Hospital Infection Control Services, and on-site visits, supporting the municipalities in the process of closing suspected cases.

The "inpatient team" has internal control of the cases that evolve with the need for hospitalization, monitoring the public and private network hospital censuses on a daily basis, being responsible for following each case until the final outcome, either death or discharge, updating data that are later published through the COVID-19 Panel.

The "exam team" daily downloads spreadsheets from the Laboratory Environment Manager (LEM), which is a platform of the Computer Department of the Brazilian National Health System (UHS). With the spreadsheets in hand, they are responsible for posting and updating the test results in the E-SUS.VS, discarding or confirming suspected cases, as well as flagging unreported cases.

Part of the technical reference team is responsible for the transparency of information and for monitoring the indicators, essential for the risk classification of the municipalities, impacting the entire local social dynamics. A state epidemiological bulletin is issued weekly and published in the Covid-Dashboard. The consolidation and dissemination of the regional epidemiological bulletins (North, South, Metropolitan, and Central) is also carried out. Through statistical analysis of the profile of cases and considering the existing literature, technical opinions are issued aiming to guide actions and strategies to be adopted.

In order to make possible the expanded criteria for the collection of exams in Espírito Santo, as well as to speed up the
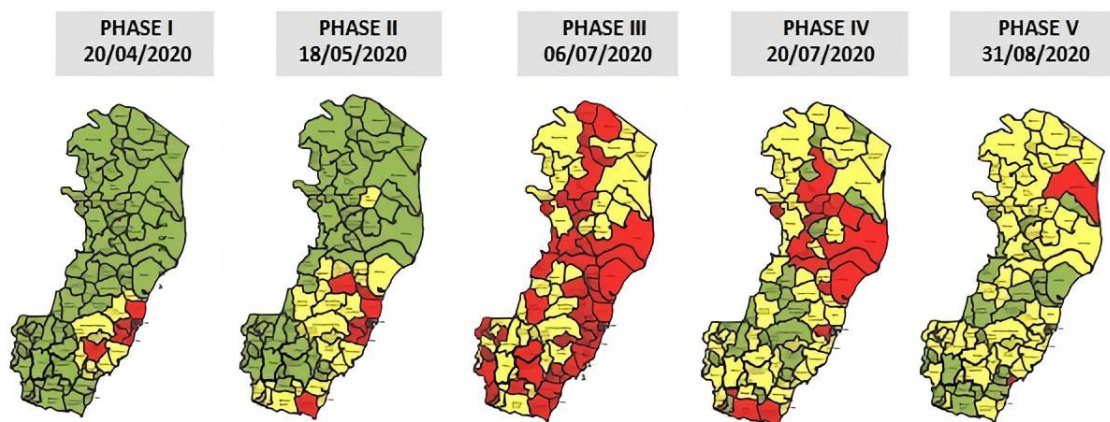
| PHASE I 20/04/2020 | PHASE II 18/05/2020 | PHASE III 06/07/2020 | PHASE IV 20/07/2020 | PHASE V 31/08/2020 |

Figure 1. Representation of the COVID-19 risk management map in the State of Espírito Santo.

RISK CHARACTERIZATION MATRIX						
THREAT	MUNICIPAL ACTIVE POPULATION COEFFICIENT (CAM) TESTE QUANTITY PER 1000 INHABITANTS (TP1000H) AVERAGE MOBILE DEATHS (MMO14D)	**EXTREME** 2.5 < FINAL RESULT < 4.0 CAM > 150% CAE 60 < TP1000h < 1000 MMO14d = Extreme	MODERATE RISK	HIGH RISK	HIGH RISK	EXTREME RISK
		SEVERE 2.0 < FINAL RESULT < 2.5 100% CAE < CAM < 150% CAE 40 < TP1000h <60 MMO14d = Severe	MODERATE RISK	MODERATE RISK	HIGH RISK	HIGH RISK
		MODERATE 1.5 < FINAL RESULT < 2.0 50% CAE < CAM < 100% CAE 20 < TP1000h < 40 MMO14d = Moderate	LOW RISK	MODERATE RISK	MODERATE RISK	HIGH RISK
		LIGHT FINAL RESULT < 1.5 CAM < 50% CAE TP1000h < 20 MMO14d = light	LOW RISK	LOW RISK	MODERATE RISK	MODERATE RISK
			ADEQUATE (0 ≤ 50%)	ALERT (>50% ≤ 80%)	CRITICAL (>80% ≤ 90%)	CRISIS PLAN (> 90%)
			OCCUPANCY RATE OF POTENTIAL ICU BEDS - STATE			
			VULNERABILITY			

Active population Coefficient = Number of Covid actives (28 days) X 100,000 inhabitants / Population
CAM = Active Municipality Coefficient
CAE = State Active Coefficient
TP1000h = Number of tests per 1000 inhabitants
MMO14d = Moving Average Deaths 14 days

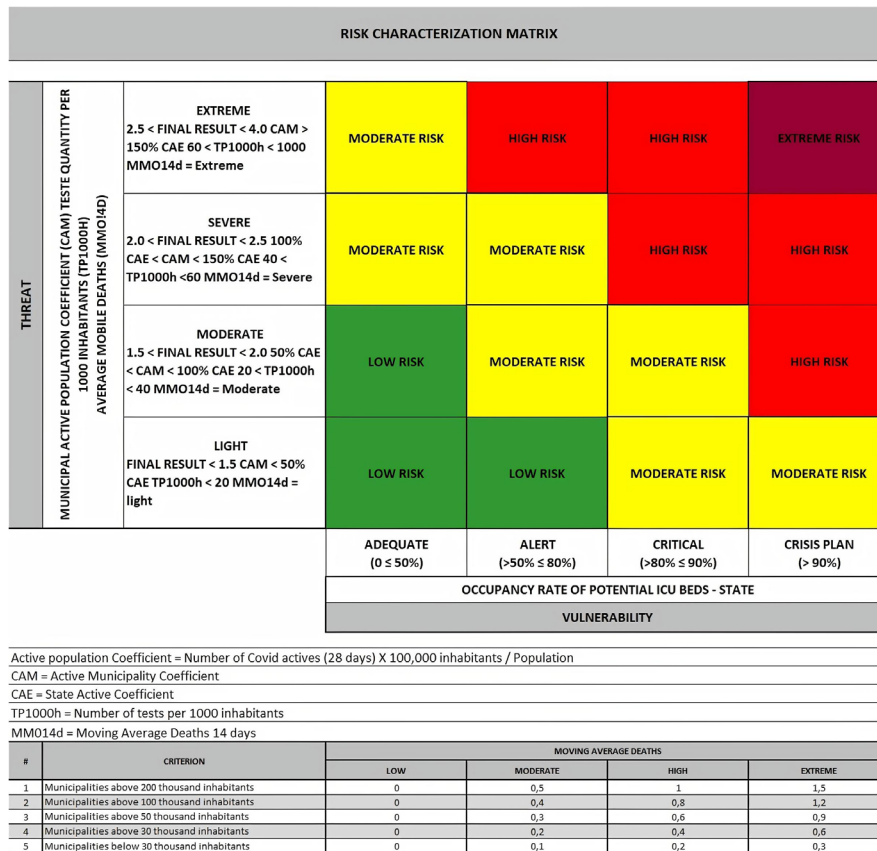| #	CRITERION	MOVING AVERAGE DEATHS			
		LOW	MODERATE	HIGH	EXTREME
1	Municipalities above 200 thousand inhabitants	0	0,5	1	1,5
2	Municipalities above 100 thousand inhabitants	0	0,4	0,8	1,2
3	Municipalities above 50 thousand inhabitants	0	0,3	0,6	0,9
4	Municipalities above 30 thousand inhabitants	0	0,2	0,4	0,6
5	Municipalities below 30 thousand inhabitants	0	0,1	0,2	0,3

Figure 2. Matrix elaborated with the parameters and criteria for the definition of the COVID-19 risk management map in the state of Espírito Santo.

results and guarantee the quality of the information produced, in March the Central Public Health Laboratory of Espírito Santo (LACEN-ES) was authorized[20], state reference for analyses in the areas of epidemiological, sanitary and environmental surveillance, which performs confirmatory and differential diagnosis of diseases/illnesses of public health interest, thus carrying out COVID-19 diagnostic tests.

In the state of Espírito Santo, a plan to expand beds in wards and ICUs was elaborated, respecting the principles of decentralization and regionalization. Instead of adopting the strategy of field hospitals, the state management opted for expanding the number of beds in the state network hospitals and only when necessary to contract with private and philanthropic network providers[21,22], Thus, the acquired equipment and the expanded beds remain in the state network and available to the population of Espírito Santo both for COVID-19 and later for the treatment of other diseases and illnesses, optimizing public resources, respecting the taxpayer and the principle of efficiency.

This decision was opposite to the conduct adopted in most of the states, but proved to be assertive in the reality in question, since at no time was there a network bottleneck or lack of beds in the UHS, with comfortable management and reasonable occupancy rate, considering the potential beds (Figure 3), which allowed the state of Espírito Santo to collaborate with its peers, receiving and offering adequate treatment in ICU beds to 30 patients from Rondônia, 36 from Manaus and five from Santa Catarina.

The political and economic situation experienced in Brazil during the pandemic exacerbated structural problems and highlighted vulnerabilities of the UHS, such as the limitation of physical, material, and human resources. Despite the challenges, the principles of universality, integrality and equity, in addition to the guarantee of free access in all spheres of health services were the foundations of the system, directing the efforts of technical bodies to ensure its (re)organization and adaptation to adversity to face the health crisis with resilience[23].

As main differential factors of the management of the state of Espírito Santo to face the pandemic, we can highlight: the existence of an online notification system with a specific form for COVID-19 and the expanded testing since March 2020, when LACEN/ES started to process, locally, the samples from the population of Espírito Santo. It is worth noting that the guidance from the Ministry of Health for the collection of tests was only for critically ill patients. In the state of Espírito Santo, the collection of tests was gradually expanded, reaching the testing of all symptomatic individuals in the month of September through the Technical Note COVID-19 No. 073/2020 - GEVS/SESA/ES, September 11, 2020[23,24]. Aiming to interrupt the chain of
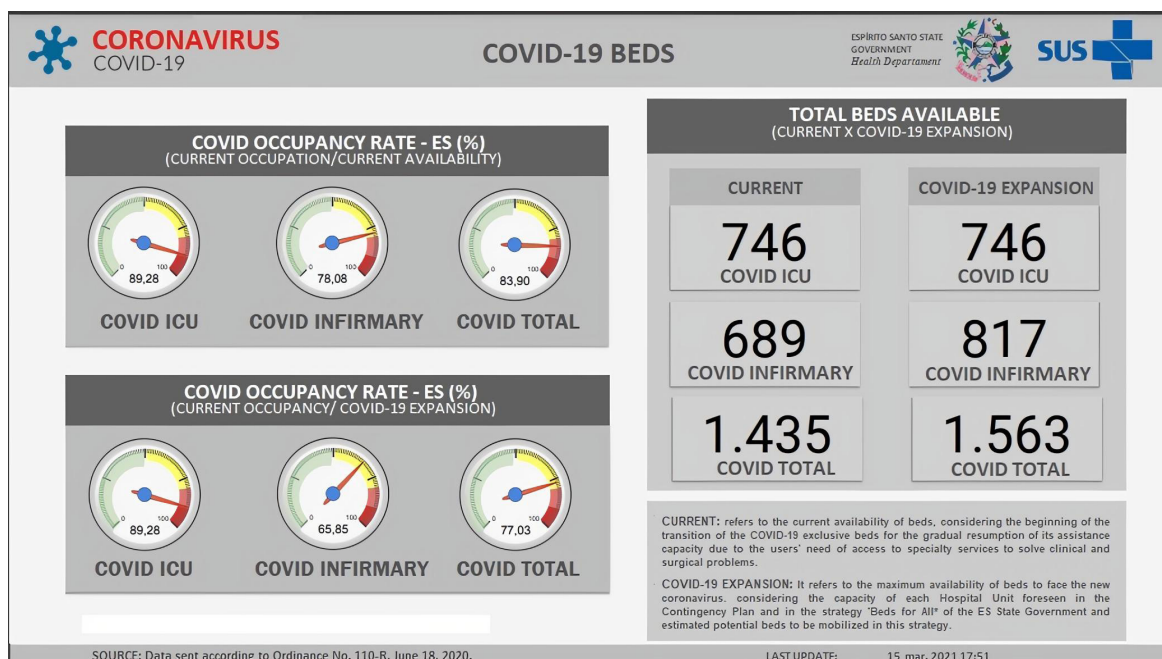
Figure 3. COVID-19 bed occupancy rate panel in the state of Espírito Santo.

transmission, SESA determined the testing of household contacts of confirmed cases, even if asymptomatic, according to Technical Note COVID-19 No. 75/2020 - GEVS/SESA/ES and Ordinance 184-R of September 22, 2020[25,26].

Besides a policy for the expansion of beds, several other public policies in different sectors have been elaborated and are available for consultation in the COVID-19 Panel of the state of Espírito Santo[27].

Innovation and data transparency in the pandemic

To provide transparency and centralize all information and data produced during the pandemic in order to generate a fast and efficient communication with the population of Espírito Santo, a public panel entitled "COVID-19 Panel - state of Espírito Santo" was developed (Figure 4). In this panel it is possible to obtain epidemiological data with detailed information about the profile of each municipality, capillarized at the neighborhood level. Besides the epidemiological elucidation, the panel contains general considerations about the disease, the legislation prepared and in force by the state management, a risk map, technical notes prepared by the various government agencies, and useful links to the entire community. In an evaluation carried out by the NGO Open Knowledge Brazil (OKBR) Espírito Santo was considered the most transparent Brazilian state in the disclosure of data regarding the new coronavirus. This evaluation is done weekly and a ranking is published, which includes all the states and the Federal Government[28].

According to the Epidemiological Bulletin of COVID-19, number 46 of March 13, 2020, from a total of more than 1,075,551 thousand notifications, more than 1,025,940 thousand tests were performed, including RT-PCR, Rapid Test, IGG, and

IGM, thus 95.4% of those notified were tested for SARS-CoV-2. Of the 78 municipalities in the state, 17 presented High Risk classification, namely: Afonso Cláudio, Águia Branca, Aracruz, Barra de São Francisco, Boa Esperança, Brejetuba, Cachoeiro de Itapemirim, Ibatiba, João Neiva, Muqui, Pedro Canário, Piúma, Presidente Kennedy, Santa Teresa, Serra, Vila Pavão, Vila Velha. Moderate risk accounted for 61, there were no municipalities classified as low risk[29].

In the COVID-19 Panel - state of Espírito Santo, we have data referring to March 18, as follows: 351,116 confirmed cases, 6,819 deaths, 1.9% lethality percentage, 329,467 cured, 218,470 suspected cases, 529,155 cases discarded, 1,098,741 notified cases, and 1,045,731 tests performed. With the city of Vitória in first place for confirmed cases, and Vila Velha with the highest number of deaths[27].

When a new disease emerges, there are many challenges to be faced, such as the overload of the health system, the behavior and transmission of the disease, the capacity of inputs and professionals, and the dissemination of proven or unproven information[30]. Considering this, and to optimize the management process, indicators were standardized for monitoring and tracking the evolution of the pandemic in the state, in order to assist in the direction of actions and decision-making. Table 1 shows the indicators used to build the Risk Characterization Matrix, the Covid-19 Panel of the state of Espírito Santo, the variables published in a freely accessible file, and the transparency tabs, which offer official information, from the characteristics of the disease to the general picture, including deaths, hospitalizations, tests, vaccination, among others.

Regarding the pandemic in the state of Espírito Santo, several strategies were outlined and implemented to capture the maximum
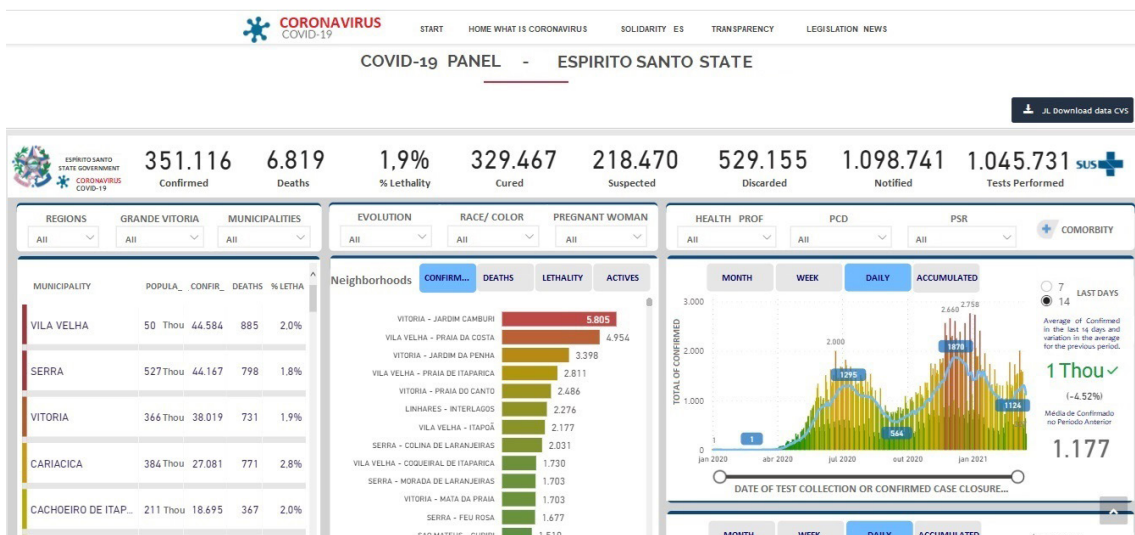
Figure 4. Layout of the COVID-19 panel developed by the management of the state of Espírito Santo to provide transparency to the pandemic data in the territory of the state.

amount of information and to give transparency to the findings for the different segments of the population. In order to spread the information produced and standardize the actions in the state, the state Epidemiological Surveillance has systematically articulated with the municipal Epidemiological Surveillance and with the health services, being responsible for the organization of the surveillance actions, aiming at interrupting the transmission chain of the disease, guiding through Technical Notes, planned and uniform actions.

The Epidemiological Surveillance worked the information received through the notifications made by various sources, consolidating the data and interpreting the findings, producing information based on evidence to support the decision making management of the pandemic in the state, defining strategies for prevention and control, with mobilization of means and resources to ensure the operationalization of the planned actions, ensuring the transparency of the findings, validating, through publicity, that the information was accessible to the entire community.

With the pandemic of COVID-19 the UHS state network could not cope with a rapid increase in severe cases, which would generate a collapse of the healthcare network. In this sense, the policy was organized to enable the continuous provision of health care to the population through the articulation of different health care points, duly structured by support systems, logistics systems, regulation, and governance of the health care network, in accordance with Ordinance No. 4.279/GM/MS, of December 30, 2010, implemented in a coordinated manner between the Ministry of Health and the health secretariats of the states, Federal District, and municipalities[31].

The regionalization of health, constitutionally predicted, was an important strategy to promote efficient health systems and more cooperative intergovernmental relations, aiming to ensure integrality and equity in health care. It was also a fundamental strategy to promote the socioeconomic development of the places, enabling the reduction of social inequalities[15].

Thus, the health regionalization policy in the state of Espírito Santo had the following main objectives: guide the health planning process based on regional needs and characteristics; guarantee access, resolution and quality of health actions and services; guarantee the integrality of health care at all levels; advance equity in health policy; reduce existing regional inequalities; rationalize spending and optimize the application of resources in the region[15], working with predictability and strategic planning, directing unwieldy decision making.

CONCLUSIONS AND IMPLICATIONS FOR PRACTICE

It can be observed that during the pandemic the UHS resilience was tested in several ways and that it was necessary the articulation of different actors for a positive intervention in the difficult scenario. Despite the great concern with the healthcare network, especially the hospital one, it proved necessary to implement HS actions aiming at interrupting the transmission chain of the disease, the notification and isolation of suspected cases according to guidelines defined in technical notes, and also the extended diagnosis made possible through the qualification of LACEN-ES.

The experience of facing the pandemic in the state of Espírito Santo has shown the potential that a state management can achieve when promoting the articulation of different governmental bodies towards a common objective, in this case, to contain the pandemic in the state territory.

The dependence on municipal records was a limitation of the process, because sometimes the delay between the occurrence and its notification was longer than desired, causing a certain relieved impression of the cross-section of incidence and lethality, which was minimized by the feedback of the system, allowing the visualization of the behavior by historical series, with the use of moving averages.

Table 1. Presentation of the indicators, variables and tabs available in the Covid-19 Panel domain, related to the transparency in the pandemic management process in the state of Espírito Santo.

INDICATORS	
RISK CHARACTERIZATION MATRIX	**COVID-19 PANEL - ESPÍRITO SANTO STATE**
Asset coefficient = Number of assets of Covid-19 in the past 28 days X 100,000 population / Population	Number of confirmed
Asset coefficient of the municipality	Number of deaths
Assets coefficient of the state of Espírito Santo	Number of cured
Number of tests per 1000 inhabitants	Case fatality rate
Moving average of deaths in the last 14 days	Number of suspects
Bed occupancy rate	Number of discarded
	Number of notifications made
	Number of tests performed
VARIABLES AVAILABLE FOR DOWNLOAD FROM THE COVID-19 PANEL	
Notification date	Pregnancy
Date of registration	Symptoms
Date of diagnosis	Fever
RT_PCR collection date	Difficulty breathing
Result of RT-PCR	Cough
Date of collection of rapid test	Coryza
Result of rapid test	Sore Throat
Date of serology collection	Diarrhea
Date of closing	Headache
Termination criteria	Comorbidities
Date of death	Pulmonary
Case classification	Cardiologic
Case Evolution	Renal
Case confirmation criteria	Diabetes
Case notification status	Obesity
Municipality	Deficiencies
Neighborhood	Smoking
Age group	Hospitalization
Age	National trips
Sex	International Travel
Race/color	Profession/Health Professional
Education	
"WHAT IS CORONAVIRUS" AND "TRANSPARENCY" TABS, AVAILABLE IN THE COVID-19 PANEL	
WHAT IS CORONAVIRUS	**TRANSPARENCY**
Transmission	Covid-19 Panel
Symptoms	Vaccination Panel
Prevention	Social isolation panel
Vaccination	Bed occupancy panel
Contingency Plan	Private network beds panel
Informative	Population deprived of freedom
Technical notes	Indigenous ethnicities
Risk management map	Contracts and execution of expenses
	Covid-19 expenditures
	Editais / bidding phases
	ES Solidarity donations
	Overview of available tests
	Economic and Social Measures
	Ombudsman reports on Covid-19
	Data source and methodology

The pandemic itself restricted available human resources and overloaded the information systems in a way never experienced before, causing network outages, bugs and slow loading of information, delaying the publication.

In the process of epidemiological investigation new demands were generated to hospitals, which in turn were already overloaded with the process of restructuring care. The establishment of technical references was essential in the process of information collection; however, it was also one of the biggest problems faced, considering the turnover of these professionals, generating slowness.

Finally, one cannot disregard the municipal elections that took place in 2020, which elected new candidates, who in turn changed part of the technical staff that worked on COVID-19, generating new adaptation processes to the newcomers, as well as generalized rework.

Finally, it is worth noting that the crisis produced by COVID-19 nationwide, beyond the decimation of our population and the incalculable after-effects, many still unperceived, needs to serve as a point for reflection and reformulation of the public policy management model in an expanded way.

AUTHOR'S CONTRIBUTIONS

Study design. Larissa Dell'Antonio Pereira. Franciele Marabotti Costa Leite.

Survey of information sources. Larissa Dell'Antonio Pereira. Cristiano Soares da Silva. Camila Brandão-Souza. Rodrigo Leite Locatelli.

Analysis of the experience. Larissa Dell'Antonio Pereira. Cristiano Soares da Silva. Juliana Rodrigues Tovar Garbin. Camila Brandão-Souza. Rodrigo Leite Locatelli.

Interpretation of results. Larissa Dell'Antonio Pereira. Cristiano Soares da Silva. Juliana Rodrigues Tovar Garbin. Juliana Rodrigues Tovar Garbin. Camila Brandão-Souza. Rodrigo Leite Locatelli. Franciele Marabotti Costa Leite.

Writing and critical revision of the manuscript. Larissa Dell'Antonio Pereira. Cristiano Soares da Silva. Juliana Rodrigues Tovar Garbin. Camila Brandão-Souza. Rodrigo Leite Locatelli. Franciele Marabotti Costa Leite.

Approval of the final version to be published. Larissa Dell'Antonio Pereira. Cristiano Soares da Silva. Juliana Rodrigues Tovar Garbin. Camila Brandão-Souza. Rodrigo Leite Locatelli. Franciele Marabotti Costa Leite.

Responsibility for all aspects of the content and integrity of the published article. Larissa Dell'Antonio Pereira. Cristiano Soares da Silva. Juliana Rodrigues Tovar Garbin. Camila Brandão-Souza. Rodrigo Leite Locatelli. Franciele Marabotti Costa Leite.

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