


Innovation in the public sector to confront COVID-19: A reality experienced at the municipal level

 <https://doi.org/10.56238/sevned2024.012-061>

Carine dos Santos Cardoso¹, Melissa Watanabe², Silvio Parodi Oliveira Camilo³ and Fabiane Ferraz⁴

ABSTRACT

Among the various concepts of innovation, some authors conceptualize them as various forms of change, from the exploration of new ideas, the construction of new models of care practices that meet the local reality, to the creation of new technologies such as medicines, high-density devices, among others, but the organization must be significant and with measurable results of effectiveness. Thus, in the year 2020, Brazil began to experience the catastrophe brought about by the covid-19 pandemic, and had to resignify many modes operating in the work processes in various areas, in the health sector, strategies to guarantee assistance to the sick population, with a view to reducing the number of deaths in Brazil. In this scenario of uncertainties, rapid actions were created in all spheres of government. Thus, the article sought to describe actions carried out in municipal public management to face Covid-19, having as a reference the municipality of Sombrio, Santa Catarina, contextualizing it with innovation in the public sector from the practice experienced in the period from 2020 to 2022. The methodological process is based on the discursive formulation on Innovation and Public Management, organized into sections, the role of Public Management in the Covid-19 pandemic, challenges in Public Health, Innovation and the use of technology in coping with Covid-19 in various scenarios, explanation of the actions carried out in the municipality, and the final considerations, pointing out the relevance of innovative strategies in the public sector.

Keywords: Covid-19 pandemic, Essential Public Health Functions, Population Health Management, Public sector, Organizational Innovation.

¹ Nurse. Doctor student in Socioeconomic Development at the University of the Extreme South of Santa Catarina (PPGDS-UNESC). Master's Degree in Collective Health – Professional Master's Degree, from the University of the Extreme South of Santa Catarina (PPGSCol/UNESC). Specialist in Family Health Strategy; Clinic Management in Health Regions; Health Economics.

E-mail: casc@unesec.net.

² Doctor in Agribusiness. Master's Degree in Business Administration. Permanent Professor of the Graduate Program in Socioeconomic Development at the University of the Extreme South of Santa Catarina (PPGDS/UNESC). Coordinator of the Observatory of Socioeconomic Development and Innovation.

E-mail: melissawatanabe@unesec.net

³ Post-doctorate in Accounting-PPGC-UFSC. Doctor in Administration and Tourism from the University of Vale do Itajaí (UNIVALI). Professor of Graduate Studies of the Master's and Doctorate in Socioeconomic Development (PPGDS/UNESC).

E-mail: parodi@unesec.net.

⁴ Nurse. Doctor in Nursing. Professor of the Graduate Program in Collective Health – Professional Master's Degree, University of the Extreme South of Santa Catarina (PPGSCol/UNESC).

Member of the Research Group on Care Management, Comprehensiveness and Health Education (GECIES).

E-mail: fabferraz@unesec.net



INTRODUCTION

On January 30, 2020, the World Health Organization (WHO) released a statement that the Coronavirus (covid-19) infection, which originated in Wuhan, a Chinese city, was a pandemic with thousands of infected people around the world, and it was necessary for the governments of the countries to take urgent measures to prevent the spread of the virus.

The release of the WHO statement, along with news reports about the rapid infection by the Coronavirus, had a great impact on the decisions of global public managers, leading them to define criteria for social isolation, the imposition of sanitary barriers, the approval of legislation to allocate economic benefits to the most affected public, among other factors that involve government policies and actions.

In Brazil, the enacted Law No. 13,979/2020 established the measures to face the public health emergency of international concern resulting from the Coronavirus responsible for the 2019 outbreak, to protect the community, being regulated by Decrees No. 10,282/2020 and 10,288/2020.

The measures adopted by world governments manifested themselves as a managerial response to the problems arising from the pandemic, where it is possible to mention that no country was immune to its effects. This "phenomenon" called covid-19 had negative repercussions in all scenarios, to a greater or lesser extent imbalance was evidenced in several sectors, with impacts on health, education and the economy of the entire world . 2021)

Although the negative effects of the pandemic can be evidenced in the most diverse sectors, health, specifically, was certainly the most affected sector, requiring public managers to adopt not only legal measures to face the installed crisis, but also management strategies to support decisions with a view to minimizing risks to the population. as well as to the economic sector, since it is directly related to the health area, due to the high demand for public financial resources required to meet the social needs originating from and resulting from a pandemic such as COVID-19.

In this sense, Gleriano *et al.* (2020) stresses the importance of government decisions, regardless of the sphere of government, being aligned with emergency public policies in terms of technical criteria and scientific knowledge, as well as with international strategic objectives, taking as references the determinations and actions adopted by the United Nations (UN), the World Health Organization (WHO), and the Pan American Health Organization (PAHO), among other national institutions that focus on research in the area.

On the one hand, people dying due to lack of immunizers and, on the other, large modernized hospitals, using state-of-the-art antiretrovirals, added to the technological innovation of biotechnology, genomics, artificial intelligence, geolocation, telemedicine, among others, were used according to economic and management capacities in the globalized world (Kobayashi, 2021)



We soon saw that during the challenges posed and the countless deaths caused by the pandemic in the world, Brazil was no different. With regard to the Brazilian health situation, it is appropriate to point out the difficulties already faced by the Unified Health System (SUS), insufficient funding, precariousness and limitations of the physical infrastructures of health services, and with the advent of the pandemic, even more relevant and effective decisions and actions were required from the point of view of agility and integration of services. based on its basic principles: Equity, Integrality and Universality.

But in the midst of the chaos installed by the pandemic and the high demands of public services, considering the already existing challenges, the systems were the support of many Brazilian families.

It created innovative strategies and articulations so that the doses of immunizers when they arrived in Brazil could be quickly applied to the population, allying professionals from various categories such as police officers, firefighters, social workers, educators, economists, farmers, private companies and other organizations with health professionals, also fostering the process of inclusion and decentralization of government decisions and actions. They guaranteed access to health care for the population and minimized the rates of death and contamination by Covid-19.

It can be seen that during the crisis originating from the pandemic, the search for the integration of services and the decentralization of government decisions and strategic actions, in the three spheres of government, were configured as an innovative process in public management in favor of the common good – access to quality health, which in turn should have been consolidated for decades.

The conjuncture in the decisions, the planning of practical actions and the action itself integrated and innovated several areas, including the technical-scientific field, such as the development of vaccines and medicines, occupational safety equipment (PPE), modification in the operational care processes, such as the insertion of the use of technologies for care that grew in all fields of health action.

Also noteworthy is the inclusion of nursing services and care in hospital and outpatient settings, aspects of total responsibility of public management provided for in articles 6, 24 items XII (Union, States and Federal District) and 30, item VII (Municipalities – technical and financial cooperation to the Union and the States) of the Federal Constitution of 1988.

In view of Kobayashi's (2021) observations on the dimension of the multidimensional impact left by covid-19, it is essential to consider the responsibilities of public management in the face of gaps and uncertainties, having to innovate in the face of a catastrophic and unsafe scenario never witnessed, propelling to guarantee human dignity beyond health.



Within this historical context that left strong changes and great reflections in all senses, from life being at work, at home, at leisure, in health and education, reinvention was fundamental for survival, however the way of doing management is also synthesized, and in innovation many guarantee the survival of their citizens, a fact that intertwines in public management ensuring development even in the midst of so many adversities and difficulties. Thus, the study is justified in wanting to reflect and identify the actions carried out to cope with covid-19, based on the case experienced in a municipality located in the Extreme South, considered small, with approximately 30 thousand inhabitants, based on innovation to ensure economic sustainability and survival of the population that resides there, also pointing to health actions that are totally innovative in the work processes to ensure access to health care. I understand that a municipality considered small does not have a complete health network, with difficulties and huge gaps, seeking to have in Primary Care (PA) the basis of its health care, and in education that guarantees food to many children.

Reflecting such acts and deeds in the delimited scenario can bring trajectories and discussions of improvements to small municipalities, but that seek to develop, to trim what role of public governors, what role of professionals, what these together can overcome even in adversity, however, it is necessary to look at the scenario, identify weaknesses, diversities and potentialities, Together in the pandemic, they produced forces and impact with such significant results that it has also never been seen before.

METHODOLOGICAL PROCESS

This article is characterized as a case study, based on the discussion of Innovation in Public Management based on a municipality in the extreme south of Santa Catarina in the face of the Covid-19 Pandemic.

The case study is just one of many ways to do research in the social sciences, and can be thought of as:

[...] It is a methodological strategy for research in the human sciences, as it allows the researcher to deepen the study of the phenomenon studied, revealing nuances that are difficult to see "with the naked eye". In addition, the case study favors a holistic view of real-life events, highlighting its character as an empirical investigation of contemporary phenomena Gomes (2008, p. 215) apud Yin (2005).

Thus, the characteristics of the study bring the relevance of analyzing the studied phenomenon and deepening knowledge, as a simple bibliographic review was initiated, using articles related to the theme published between 2020 and 2021, using the descriptors Covid-19 Pandemic. Essential Public Health Functions. Population Health Management. Public sector. Organizational Innovation. After the research of the research, sessions were organized for a better design of the research, in which the role of public management in the covid-19 pandemic was worked; Challenges



in Brazilian public health, Innovation and the use of technology in the fight against covid-19 in various scenarios. In the study data for the municipal scenario, evidence from Documents and Records in the municipality's archive was used, along with the author's direct observation, emphasizing that one of the authors has been working in the municipality since 2010, corroborating the study period, in 2020 she worked on the front line as a PHC nurse, and in 2021 in the coordination of Health Planning, therefore, experiencing every scenario studied in practice.

For the collection of evidence in case studies, there are six sources (documentation, archival records, interviews, direct observations, participant observations, and physical artifacts) (Santos, 2011).

Subsequently, the organization of the contextualization themes explains the actions carried out at the municipal level, delimiting the municipality of Sombrio, Santa Catarina in the period from 2020 to 2022.

Then the discussions and final considerations highlighting the relevance of strategies and referring to the importance of Innovation in Municipal Public Management, making it necessary to study a case in a municipality to

Empirical investigation of the phenomenon of innovative changes brought about in the context of real life, even in the uncertainty of the context studied in the period caused by such limitation as a result of the pandemic.

THE ROLE OF PUBLIC MANAGEMENT IN THE COVID-19 PANDEMIC

The World Development Report 2022 published in The World Bank (2022), points out the economic impacts of Covid-19, and brings the severity in the economy, revealing the preexisting economic fragilities, and pointing out that as the pandemic advanced in 2020, many families and companies were not prepared to withstand such an income shock of such scale and duration. It also emphasizes studies that indicate that more than 50% of households did not have the financial capacity to sustain their basic expenses for more than three months, both in the emerging and advanced economies, made governments seek answers to the installed crisis and include social policies and security to neutralize the impacts and disparity in poverty.

Considering the scenario resulting from the covid-19 pandemic, and when it comes to the state's responsibility in adopting measures and strategies aimed at maintaining the health of the population as a whole, while seeking solutions that can minimize public costs in the area, there is a need to promote innovative interventions that face the health crisis already installed (Valentim *et al.*, 2020).

And since it is a new disease, with few known parameters and that manifests itself in different ways in the individuals that make up the population and, considering that the spread of coronavirus



infection depends on health care and population numbers, at the municipal level the strategies to combat covid-19 follow principles established by federal and state legislation, among which we can highlight those that have become a consensus in most Brazilian municipalities, i.e., isolation of identified or suspected cases; mobilization of resources to pay for treatment and immunization of the population; and, sanitary hygiene and social distancing actions (Ito and Pongeluppe, 2020).

Although the actions adopted by most municipal governments are common, with the aim of providing technical and financial cooperation to the Union and the States in the fight against covid-19, as provided for in the Magna Carta, it has not been enough to eliminate contamination and the risks of death among the population, as well as to reduce the public costs resulting from the demand.

In this sense, the debate on the actions adopted by government officials involves the specific local characteristics and conditions and the need to unite the institutions in an organized and systematized action, so that it is possible to stimulate and promote the generation of links between federated entities, universities and service providers for the management of the crisis through innovation and managerial efficiency. which implies favoring the incorporation of technology (Valentim *et al.*, 2020; Gleriano *et al.*, 2020).

Along these lines, Ito and Pongeluppe (2020) state that innovation and managerial efficiency at the municipal level to face the crisis generated by the pandemic are emerging and essential aspects to support decision-making, in view of the high demand and scarcity of financial resources, because management practices directly influence the performance of the municipality for the maintenance of good health indices in the population when it comes to infection and deaths by the population. coronavirus. The aforementioned authors also highlight the importance of governance in the actions of the municipal public administration within a perspective of elaboration and implementation of public policies elaborated collectively, through the integration between the public and private sectors, since the negative effects of the pandemic impact all sectors.

In addition to the intersectoral articulation, Giovanella *et al.* (2020), mentions the relevance of reflecting on the uncertainties brought about by the context of the pandemic, requiring strategic and innovative actions to reinvent workflows and processes aimed at each specific situation; to intensify health surveillance; for the promotion of social participation; and for the collection of data and epidemiological indices that demonstrate the reality of the pandemic at the municipal level. Based on this, the participation of Primary Health Care (PHC) in health surveillance should be reinforced and strengthened, aiming to combat covid-19.

When it comes to the internal workflows carried out by the municipal management in the fight against the pandemic and its negative effects, the Federal Court of Accounts (TCU) warns that the focus of strategic and innovative management decisions should be based on physical and budgetary planning, that is, combining the health plan and the budget plan. Other secondary



measures for workflows and processes, but no less important, are highlighted by the TCU, such as, for example, the qualification of health professionals involved in public policies aimed at the pandemic; population mapping for vaccination; the transparency of the municipal contingency plan in a way that shows society all the actions, strategies and guidelines of the municipal government against Covid-19, as well as detailed vaccination programming; and, finally, the partnership between governmental and non-governmental entities to expand the fulfillment of demands during the pandemic (Brasil, 2020).

INNOVATION AND THE USE OF TECHNOLOGY IN HEALTH TO COPE WITH COVID-19: EXAMPLES OF ACTIONS DEVELOPED IN BRAZILIAN MUNICIPALITIES

The term innovation assumes several concepts, among which it is possible to consider that it is about exploring new ideas, which, when put into practice, are relevant to processes and organizations, making learning possible, as well as the achievement of established objectives and goals with greater efficiency and effectiveness (Machado, 2007).

For Mattos and Guimarães (2005), the concept of innovation should be conceived from creative activities, since innovation and creativity are complementary, that is, it is the creativity exercised in processes and organizations that one finds the possibility of establishing new relationships between concepts and events, connecting them so that they result in new knowledge entities.

Tidd, Bessant and Pavitt (2008) conceptualize innovation as several forms of change, and are presented by the authors in four distinct categories, as can be seen in chart 1 below:

Table 1 – The concept of innovation divided into categories

Product Innovation	Introduction of a new or significantly improved service or good compared to the services and goods already in the organization
Process innovation	Implementation of a method of production or delivery of new or significantly improved services or goods compared to the processes already in place in the organization;
Organizational Innovation:	Implementation of a new organizational or managerial method that differs significantly from the methods already existing in the organization
Innovation in Communication	Implementation of new method of promoting the organization or its services and goods, or new methods of influencing the behavior of individuals or other organizations.

Source: Tidd, Bessant e Pavitt (2008, p. 30)

For the authors, Mulgan and Albury (2003), innovation can be divided into 3 stages:



- Stage I: it is the so-called "Incremental" stage, where small changes are made to existing services or processes, without any changes in the organizational structure or in the relationship between organizations;
- Stage II: the second stage is called "Radical", which aims at the development of new services, without changing the general dynamics of a given organizational sector;
- Stage III: the last stage is characterized as "Systemic or transformational", as it is based on the insertion of new technologies, new work structures, relationships, generating a change in the level of organizational performance.

When it comes to the public sector, Oliveira (2014) points out that in Brazil, innovation follows models applied in first-world countries, in order to better respond to state demands in order to integrate science, technology and economic policies. However, innovation in the country faces barriers imposed by excessive bureaucracy, unpreparedness of servers, lack of economic incentives for servers, lack of resources for investment in technology and decision-making based on short-term results.

Considering Vargas and Martinez (2013) emphasize the relevance of innovation as a differential for public services today, including for the survival of the State, as its primary objective is to propose new approaches for the achievement of services provided to the population and provide greater efficiency in internal administrative and management processes.

In the same vein, Mulgan and Albury (2003) state that innovation in public management has been advancing over time, from the perspective of creating and implementing new processes, methods and techniques that imply a significant improvement in the efficiency, effectiveness and effectiveness of public sector results for society.

In these terms, innovation for public management presents itself as a tool for the development of technologies and practices that will satisfy social demands, as needs arise, where planning must be applied to the elaboration of strategies capable of ascertaining the organizational environment and its responsibilities towards the public good. It is also important that communication between the political sector and other institutions involved is an effective element in the development and application of strategies to achieve better long, medium and short-term results based on decision-making, which should be based on the government's objective or goal (Albury, 2005).

The contributions arising from innovation and the use of technology for the public sector can be observed today, in view of the context of the COVID-19 pandemic, both in the technical-scientific scope and in the scope of the internal processes of health service providers.

There are many examples that can be cited, where the crisis originating from the pandemic gave way to technological innovation, as in the case of personal protective equipment, specifically Face Shields, which were developed by industrial equipment through 3D printers, being tested to



block droplets of contaminated saliva within reach of the face, acting as a barrier against contamination by the coronavirus, with a view to minimizing risks to which health professionals are exposed (Santos, 2021).

According to what the World Health Organization (WHO) proposes, research and the development of technological and innovative actions and products are essential to achieve the global goals in the fight against covid-19, in the same way that they boost and strengthen health systems. Based on the aforementioned contributions, the WHO also advises that countries appropriate digital technologies for the implementation of public policies that promote the health of the population and the fight against the transmission of the virus, as well as the effects of the pandemic on other sectors, given that they enable agility in the decision-making process and in the capacity to respond in surveillance and in meeting this type of demand. which is a priority (Ito and Pongeluppe, 2020).

The contributions of technology and innovation are notorious and observed over time, from the discovery of penicillin and vaccines to the creation of magnetic resonance imaging exams, whose scientific achievements have expanded the frontiers of knowledge and knowledge in health (Valentim *et al.*, 2020).

The Department of Informatics of the SUS, subordinated to the Ministry of Health, by developing a booklet of digital strategies in health for the years 2020 to 2028, demonstrates the relevance of the use of information systems in data analysis to face and combat epidemiological outbreaks such as the pandemic generated by the Sars-CoV-2 virus (BRASIL, 2020).

The use of digital systems in health can be evidenced in the fight against the pandemic in several Brazilian cities, such as Florianópolis, capital of the State of Santa Catarina, which implemented protocols that identify people with symptoms through telemonitoring (Vale *et al.*, 2020).

A radio communication system, created by the professionals themselves, was implemented in a rural Basic Health Unit (BHU) in Pernambuco to promote continuous communication with the community, where data on the pandemic are disseminated through bulletins on instant messaging applications, for the purpose of information and clarification of doubts about covid-19 and the services provided at the local BHU. In Londrina, a city in Paraná, the technology is used for the remote work of professionals on leave due to covid-19 infection. Through remote access, this professional assists professors and students at the State University of Londrina with guidance and coping measures aimed at workers from various sectors in the region. This action provided training for about 2,500 workers (Giovannella *et al.*, 2020).

In the context of innovative practices, the city of Belo Horizonte is cited as an example, where priority testing of health professionals was implemented, considering the high degree of contact with people infected by the coronavirus. In Canaã dos Carajás (PA), an exclusive clinical



monitoring scheme was set up for health professionals and users with comorbidities (Vale *et al.*, 2020).

Also with regard to monitoring actions, in Nova Lima the Community Health Agents assist in the inspection of commercial establishments to ensure that they follow the sanitary determinations and procedures to combat the spread of the coronavirus. Measures and efforts for population health education are also identified in Recife, where professionals from the Expanded Family Health Center (NASF) worked directly, using the UBS structure itself, such as waiting rooms, triage room, vaccination room, and also with people who remained in lines (Giovanella *et al.*, 2020).

Regarding the use of infrastructure for innovative actions, Valentim (2020) points out that in places where the infrastructure of the UBS allowed, actions were implemented to divide internal flows, with the assembly of triage tents outside the units to determine entry doors - Covid or Non-Covid and field hospitals to better serve the population.

Other actions and measures are cited by Giovanella *et al.* (2020) that demonstrate innovation in health services aimed at coping with COVID-19, such as: support for the population considered vulnerable, whether due to health or social conditions; surveillance with or without technology for remote identification, notification and monitoring of COVID-19 cases; technology-based or technology-free surveillance in nursing homes, commercial and industrial establishments; provision of health education services in communities; and, the enhancement of communication resources to the population, both for the dissemination of data and care measures, as well as for access to the clarification of doubts and suggestions.

From the above, it is possible to consider that in the midst of the crisis, the resilient ability of human beings awakens their creative potential due to the sense of survival that, combined with technical-scientific knowledge, results in practices, products and services capable of minimizing the risks of illness and death of the population, as well as direct and indirect contagion by the virus, including the negative effects of a pandemic on other sectors of society.

However, it is up to the public administration to assume its role and responsibility in encouraging and adhering to innovative actions and technologies to combat covid-19, achieving the benefits presented, emphasizing that the health of the population, regardless of the location, is an extremely relevant state activity, which has impacts on the economy, as it requires the use of public financial resources, in most cases, in large proportions.

ACTIONS CARRIED OUT IN THE MUNICIPALITY OF SOMBRIO-SC

The municipality presented in the study is Sombrio, located in the extreme south of the state of Santa Catarina, with approximately 30 thousand inhabitants. It is a city that has a municipal health



plan composed of health strategies and policies aimed at preventing, promoting, and reducing the risks of diseases and injuries according to the epidemiological profile of the municipality.

The Municipal Health System of Sombrio is under Full Management, with Primary Health Care structured in nine (9) units with Family Health Strategy (ESF) teams, seven (07) Oral Health teams (eSB), one (1) UBS, which meets the demand for specific medical services in the areas of pediatrics, gynecology and obstetrics of the nine (9) ESF, outpatient mental health services, immunizations, among other services and programs recommended by the Ministry of Health, are also developed in the same physical space (Sombrio, 2022).

With this structure, the management of the municipality of Sombrio, attentive to the events of the world scenario and connected to the actions carried out by the State of Santa Catarina, issued Decree No. 48, of March 18, 2020, which declared the local emergency situation and measures to combat the pandemic. Among the measures established by the aforementioned decree was the authorization for the creation of the Covid-19 Monitoring Committee and a Contingency Plan (Article 3). In less than 24 hours from the issuance of the Decree and the dissemination of the pandemic at the local level, a Triage Center (TC) was set up to assist people with respiratory symptoms of the disease (Sombrio, 2020).

One of the first measures carried out together with the planning and coordination of actions by the City Hall after the creation of the Commission to Combat Covid -19", a group that with a single objective offers 'Rapid Response' and strengthens the capacity of the municipality's health system to respond to the new Virus. After that, it dedicated itself to the planning of referral flows, the purchase of Personal Protective Equipment, prevention measures, training and training of professionals, among other actions, fundamental for the containment and confrontation of the pandemic.

For the purpose of a consolidated presentation of the initiatives carried out and demonstrated, the operations carried out in the municipality are mentioned, starting with the involvement of the different departments with a single objective "to plan and execute actions to combat Covid-19, considering the complexity of the health, social and economic impact and the diversity of mitigation actions/measures.

Following international and national recommendations, especially those of the state of Santa Catarina, strategic measures were instituted to cope, one of the first was social isolation, including events in all areas, closure of public and private schools, restriction of the movement of people in the city, distancing and distancing of people with symptoms of the disease, regular hygiene of hands and objects of frequent use (as well as complementary practices of hygiene) and respiratory etiquette in all public and private spaces, in this sense, the planning and execution of it took place beyond the biological dimension of Covid-19, considering the social conditions, seen in each action carried out.



In addition to these actions, here are some strategies operationalized and increased in the municipality during the pandemic period:

Table 2 - Follow-up of the Health area

Share	Objective
Limitation of elective care in primary health care units (BHU).	Prioritization of urgent and emergency care.
Reorganization of the workflow, with temporary closure of some Family Health Strategies (ESF), due to professionals with covid-19.	Valuing Life, the number of sick professionals, making it necessary to reorganize strategies for the reorganization of teams to provide care to those who needed it, including frontline workers.
Creation of the Covis-19 Screening Center;	Provide a safe space for people, separating asymptomatic patients from symptomatic ones.
Acquisition of mobile phone with Whatsapp for all health services.	Promote contact between health teams and users, through the application, solving doubts, providing opportunities for continuity of the bond and communication, The tool, until then common by the population, was not usually part of the routine of the ESFs, but it gained incorporation in the pandemic, becoming fundamental in the scheduling of appointments, procedures and routines of the teams, where to this day they continue to adopt the tool.
Sanitization of health facilities and public places.	The regular application of sanitization of health units and public places aimed to reduce the spread of the virus.
Home care for infected people and also for other patients who needed urgent care.	These services, considered routine by the teams until then, became a challenge, first the fear and uncertainty of the disease made many isolate themselves from their families, ensuring the safety of their families; According to the following protocols, the appropriate clothing for each visit, among other changes in the routine, made the lives of many uncertain and exhausting, conditioned to the emotional stress of coping on the front line to guarantee dignified assistance to those who needed it.
Elaboration of the booklet "Orienta Coronavirus.	Assist the population in self-care measures in individual home and community actions .
Use of new spaces for the health team, such as the use of the gymnasium and the setting up of tents in strategic places for health professionals to work;	Vaccination of as many people as possible, and the work of professionals in public spaces.
Implementation of the vaccination system called " <i>drive-thru system</i> ."	The implementation of the system against Influenza continued, after the arrival of the vaccine against Covid-19 and the mapping of vaccination.
Creation of protocols that respond to the needs of people beyond the clinic, among examples. Oral Health Protocol, which after the relocation of these professionals in 2020 to work on the front line; Protocol for directing pregnant women.	Safety of oral health professionals and the population, responding to demands; Protocol for pregnant women, complying with regulations and ensuring safe care, also creating a database for follow-up and monitoring, according to current guidelines.
Implementation of the Home Care Service (SAD).	The service sought to guarantee access and comfort of the home to people who needed it, a service that is in wide operation.

Making of masks and aprons to distribute to the population.	Union of the population and the textile sector together with the health sector for the manufacture of PPE.
---	--

Authors, 2023

Table 3 - Follow-up of the area of Education and other areas

Suspension of face-to-face classes in the public and private network	With the suspension of face-to-face classes, there was an increase in concern about children who sought their comfort and food at school, and it was necessary to articulate maintenance strategies for these children, with food security, considering care education in this scenario.
Creation of a special educational system for students in the municipal network, <i>online</i> and with the delivery of activities;	Guarantee education to public school students.
Suspension of face-to-face services of the Municipal Administration,	Exceptional online service, and guarantee of essential services.
Creation of a database with records and information on people in vulnerable situations	Provide people with the opportunity to register for access to basic food baskets, avoiding hunger.
Innovation in Family Farming actions, with a guarantee of local sustainability	Redistribution of food, identifying people in need and assisting them in the access process.
Identification of vulnerable and homeless people,	Several actions and access strategies were set up to serve needy and homeless families.
Live streams and real-time training	With the return of the school year in 2021, education professionals were trained and empowered to ensure the safety of students and everyone by health professionals.

Authors, 2023

Considering the year 2021, the second year of the pandemic, the innovative actions went beyond care and health care practices, because with the return to school activities, which generated concern for parents and teachers due to the fear of exposure to the coronavirus, the municipal management implemented *live and* online training systems in real time with training provided by health professionals to clarify doubts and provide guidance to the teachers. The initiative was extended and gave rise to the creation of a flow between schools, parents and the Triage Center.

The municipality acted in the population mapping for vaccination, characterizing the effectiveness of public health policies, in line with the state and federal government, as prescribed by the TCU for carrying out secondary actions under the responsibility of municipalities, according to the Federal Constitution of 1988 (Brasil, 2020).

This internal and intersectoral communication of municipal public management, with the use of human resources in the health area for training school teams, as well as the modification of workflows, is considered by Giovanella et al. (2020) as an innovative action, which strengthens the participation of Primary Health Care (PHC) in health surveillance and promotes the fight against covid-19. In addition to the intersectoral articulation, the cited author highlights the relevance of reflecting on the uncertainties brought about by the context of the pandemic, through scenario analysis, including professionals from the basic network in the hospital environment when it was



necessary at the height of the pandemic, which showed unity and strength between PHC and the local hospital.

RESULT AND DISCUSSION

Seeking to corroborate with authors in the number of deaths caused by Covid-19, data were collected from the official documents of the Screening Center of the municipality of Sombrio, which demonstrate the scenario of the pandemic in the years 2020 and 2021, as can be seen in table No. 04 below.

Chart 4 - Scenario of the COVID-19 pandemic in the municipality of Sombrio-SC

CASES OF DEATHS DUE TO COVID-19	
Year	Cases
2020	26
2021	57
TOTAL	83
CARE OF SUSPECTED AND CONFIRMED COVID-19 PATIENTS	
Year	Cases
2020 / 2021	14.067

Source: Dark (2022).

Considering that the actions were taken not only to reduce contagion and deaths, but to improve local health, aiming at quality and safety in the care at that time, seeking to guarantee the population's access to health services, or promoting health at home.

It should be noted that the adoption of legal measures was the first step in relation to the responsibility of the municipal public management of Sombrio in the fight against the pandemic, issuing the official act that declared through Decree No. 48, of March 18, 2020 the emergency situation in the municipality of and defines other measures to face the public health emergency of international importance resulting from the Coronavirus (COVID-19), thus, the coordination of PHC together with other members of the teams, community leaders, religious representatives, public and private institutions expanded ties as a way to establish communication between government and community, putting into practice the contingency plan, following the guidelines of the Federal Court of Accounts, where the focus of strategic decisions should be based on physical and budgetary planning (Brazil, 2020),

The second attitude was to expand communication with the community to clarify the situation and mitigate the risks of contamination by the coronavirus through information, since this was a new situation and the first challenge to be overcome by the municipal administration. In Albury's view, 2005, this type of communication between the political sector and other institutions involved is an



effective element in the development and application of strategies to achieve better long, medium and short-term results, through what was proposed in the Municipal Contingency Plan.

Respecting the regulations, innovation in the way of managing the public portfolio is also evidenced in these two aspects, compliance with legal procedures through physical and budgetary planning and transparency in information to the population, with a view to integrating institutions and efforts in the fight against covid-19 (Brasil, 2020; Giovanella *et al.*, 2020).

As the needs arose, other actions were gradually adopted, applying planning and strategies according to what was manifested in the pandemic scenario, in order to contemplate the responsibilities of the public administration in relation to the demands of society during the period described (Albury, 2005).

Communication and access to information were also fundamental elements for the training of the teams, in the face of a chaotic scenario and an unknown disease. Aware of the seriousness of the problem, the management sought to equip the work teams with Personal Protective Equipment (PPE) to avoid contagion and the lack of professionals due to contamination by the coronavirus. In addition, it should be noted that access to information about covid-19 allowed management to organize teams and internal workflows to provide services full-time, including on weekends, in order to reduce the demand for patients with respiratory symptoms in the city's hospital, which is maintained by the State.

The implementation of the work methods and the influence on the behavior of the employees who make up the health teams in the municipality of Sombrio, creating awareness about the importance of the use of PPE, through access to information, demonstrates that the innovation initially took place in the field of communication, which according to (Tidd, Bressant and Pavitt, 2008, p. 30) occurs with the "implementation of a new method of promoting the organization or its services and goods, or new methods of influencing the behavior of individuals or other organizations."

In this case, Innovation through Communication took place in the first stage that constitutes the innovation process, which is the so-called incremental, consisting of small changes in the work routine to meet the growing demand, generating greater efficiency in the population's health care and efficiency in the internal processes that are at the rear of health services (Mulgan and Albury, 2003; Faria, Vargas and Martínéz, 2013).

Over time, due to the decrease in the number of professionals in the Units due to absences due to contamination by covid-19, the closure of some units became mandatory, the lack of professionals made it possible to think about the elaboration of new flows of activities, considering the need to provide greater agility in exams, the results of which took up to 15 days.



The analysis of the scenario, as a strategic attitude of the team that makes up the municipal management, was presented as a relevant tool for decision-making, reflected in changes in official acts with new measures to identify positive cases, given the emergency of the situation, aiming at achieving the objectives and goals established in the Contingency Plan with greater efficiency and effectiveness (Machado, 2007).

This strategy, based on the monitoring of events, enabled the generation of new knowledge and ideas, with satisfactory results, since in just five days the triage center was set up with its own resources, in a physical space provided by the administration of the local hospital (managed by the State). The place was equipped respecting all the standards of health surveillance, electronic medical records, ventilation, seven rooms to accommodate offices, examination room, reception and reception. In addition, the team was prepared and trained to meet the demand of symptomatic patients in the municipality, from Monday to Friday, and according to changes in demand, also on weekends. In the TCU's view, these measures are considered secondary in the innovation process of public management to combat covid-19, however, they are as important as the planning of the budget for health (Brasil, 2020).

According to Mattos and Guimarães (2005), the innovation implemented in the situation narrated above was manifested through the union of creative ideas, enabling the integration between the Municipality and the State, where it was possible to expand the services and carry out testing exams in the short term, reflecting in benefits for the population by the isolation of positive cases identified in the screening center. without compromising the use of financial resources, combining the actions of the contingency plan with the maintenance of the municipality's responsibility in the public spending indices established in the budget law for health (Brasil, 2020).

Although the efforts were directed to addressing the situation of collapse of health services, the innovation of internal processes and workflows in the dimension in which they occurred was not the focus of municipal management. However, the moment required positioning, planning, and innovative strategic decision-making in a short period of time to minimize the negative impacts, where the unity of the entire team was fundamental, because according to Gleriano *et al.* (2020), in pandemic situations, government decisions and actions must be integrated with the participation of health professionals and other workers from public and private institutions for joint actions.

It is understood that the engagement of all professionals to achieve the goals and objectives established by the Municipal Contingency Plan was essential. However, the identification of the relevance of everyone's participation led the administration of the municipality of Sombrio to face the second challenge, because if, on the one hand, there was the risk of contagion and illness of employees and their families, on the other hand, there was the imperative need to integrate the efforts



of all those directly and indirectly involved in decision-making and practical actions to combat the proliferation and contagion by the coronavirus.

Thus, as seen, the 2020 fiscal year was marked by the implementation of changes and facing the challenges for the municipal management of Sombrio, where creativity, as an enhancer of innovation, manifested itself as a differential for the construction of new ways of working, boosting and strengthening the local health system, providing greater efficiency in internal administrative processes, in care services to the population and management (Faria, Vargas and Martinez, 2013; Ito and Pongeluppe, 2020).

Considering some authors who point out the allocation of resources to essential areas should be revisited and reassessed, and with regard to the pandemic we can consider health, science and technology, education and social protection, and as it brings (Kobayashi, 2021), this promotes greater protection of the population, recovery of employability and reduction of socioeconomic inequality from the mobilization of global plans, national and regional.

FINAL CONSIDERATIONS

From the reflection on the concepts attributed to innovation, as well as on what the theory provides for the responsibility of municipalities in facing the covid-19 pandemic, as a form of technical and financial cooperation with the Union and the States, it is undeniable to state that innovation, combined with the use of digital technologies, has been strongly contributing to Brazilian public management, Mainly because of the technical and scientific benefits achieved in the area of health, of which the most important can be mentioned – the maintenance of life.

Regarding the scenario presented by the municipality, object of this study, it is possible to highlight that innovation was applied in work processes, in the production of health using technological tools, in the change of service flows, in the adaptation to leave PHC care and contribute to hospital emergencies, in creativity and innovative thinking in solutions with quick responses to those who need them.

However, identifying local needs, adopting new methods, and delivering operational health procedures with agility and rapid responses was challenging. Despite this, it is possible to implement strategies, all it takes is the union of intersectoral forces, seen and experienced in the fight against the pandemic.

Communication gained prominence in the pandemic and innovation was strongly highlighted, bringing people closer to the world in real time, with social networks and the use of technology, where through applications and information systems it positively influenced the behavior of professionals, the engagement of elaborate strategies, as well as the population that gained answers when they needed it most with ample information about the measures and care necessary to



avoid contagion and spread of the virus, seen in *open Lives*, meetings, training and qualification with the use of technologies.

Finally, several groups of people were part of these strategic assemblies, contributing to the resumption of the municipality's activities, making clear the strength for the common good, and the importance of innovations in the public sector, from technological innovation, to innovation in the work process, to achieve goals and reduce the disparity in all airlines for the Brazilian population



REFERENCES

1. Albury, D. (2005). Fostering innovation in public services. *Public Money & Management, 25*(1), 51-56.
2. Brasil, Ministério da Saúde. (2020). *Lei nº 13.979, de 6 de fevereiro de 2020*. Dispõe sobre as medidas para enfrentamento da emergência de saúde pública de importância internacional decorrente do coronavírus responsável pelo surto de 2019. Recuperado de https://www.planalto.gov.br/ccivil_03/_ato2019-2022/2020/lei/113979.htm
3. Brasil, Câmara dos Deputados. (2020). *Decreto nº 10.282, de 20 de março de 2020*. Regulamenta a Lei nº 13.979, de 6 de fevereiro de 2020, para definir os serviços públicos e as atividades essenciais. Recuperado de <https://www2.camara.leg.br/legin/fed/decret/2020/decreto-10282-20-marco-2020-789863-publicacaooriginal-160165-pe.html>
4. Brasil, Tribunal de Contas da União. (2022). *O papel do gestor local no combate à pandemia de Covid-19: boas práticas de governança e gestão da crise*. Brasília-DF.
5. Brasil, Ministério da Saúde, Secretaria-Executiva, Departamento de Informática do SUS. (2020). *Estratégia de Saúde Digital para o Brasil 2020-2028*. Brasília-DF: Ministério da Saúde.
6. Brasil. (1988). *Constituição da República Federativa do Brasil*. Brasília, DF: Senado Federal: Centro Gráfico.
7. Bruno-Faria, M. de F., Vargas, E. R. de, & Martínez, A. M. (Eds.). (2013). *Criatividade e inovação nas organizações: desafios para a competitividade* (1st ed.). São Paulo: Atlas.
8. Giovanella, L., et al. (2020). A contribuição da atenção primária à saúde na rede SUS de enfrentamento à Covid-19. *Saúde em Debate, 44*, 1-21.
9. Gleriano, J. S., et al. (2020). Reflexões sobre a gestão do Sistema Único de Saúde para a coordenação no enfrentamento da COVID-19. *Escola Anna Nery, 24*(spe).
10. Gomes, A. A. (2008). Estudo de caso - planejamento e métodos. *Nuances: Estudos sobre Educação, 15*(16), 215-221.
11. Ito, N. C., & Pongeluppe, L. S. (2020). O surto da COVID-19 e as respostas da administração municipal: municipalidade de recursos, vulnerabilidade social e eficácia de ações públicas. *Revista de Administração Pública, 54*(4), 828-850. <https://doi.org/10.1590/0034-761220200398>
12. Kobayashi, R. M. (2021). COVID-19 e os impactos de um fenômeno multidimensional. *Saúde Coletiva, 11*(68). Recuperado de <https://revistasaudecoletiva.com.br/index.php/saudecoletiva/article/view/1781/2102>
13. Machado, D. D. P. N. (2007). Organizações inovadoras: estudo dos fatores que formam um ambiente inovador. *Revista de Administração e Inovação, 4*(2), 05-28. Recuperado de <http://www.revistas.usp.br/rai/article/viewFile/79078/83150>
14. Mattos, J. R. L. de, & Guimarães, L. S. (2005). Gestão da Tecnologia e Inovação: Uma abordagem Prática. 1ª Ed. São Paulo: Saraiva.



15. Mulgan, G., & Albury, D. (2003). Innovation in the public sector. *Cabinet: Office*. Recuperado de <http://www.michaellittle.org/documents/Mulgan%20on%20Innovation.pdf>
16. Oliveira, L. G. de. (2014). Inovação no setor público: uma reflexão a partir das experiências premiadas no Concurso Inovação na Gestão Pública Federal. Brasília: ENAP.
17. Predebon, J. (2003). Criatividade: abrindo o lado inovador da mente (5ª Ed.). São Paulo: Atlas.
18. Santos, M. F. (2011). Estudo de Caso como Ferramenta Metodológica. *Meta: Avaliação, 3*(9), 344-347.
19. Santos, N. D. S. dos. (2021). Inovação na gestão pública: o uso de tecnologias inovadoras para produção de EPIs durante o período da pandemia da COVID-19. Artigo Científico, Universidade Federal de Campina Grande, Sumé-PB.
20. Sombrio. (2020). *Decreto nº 48, de 18 de março de 2020*. Declara situação de emergência no município de Sombrio e define outras medidas para o enfrentamento da emergência de saúde pública de importância internacional decorrente do Coronavírus (COVID-19) e dá outras providências. Recuperado de www.leismunicipais.com.br/sombrio
21. The World Bank. (2022). *World Development Report 2022: Finance and services for an equitable recovery*. Chapter 1: The economic impacts of the COVID-19 crisis. Recuperado de <https://www.worldbank.org/>
22. Tidd, J., Bessant, J., & Pavitt, K. (2008). *Gestão da inovação* (3rd ed.). Porto Alegre: Bookman.
23. Vale, E. P. do, et al. (2020). Reorganização da Rede de Atenção à Saúde para o enfrentamento da COVID-19 no município de Canaã dos Carajás, Pará. *APS em Revista, 2*(2), 83-90.
24. Valentim, R. A. de M., et al. (2021). A relevância de um ecossistema tecnológico no enfrentamento à Covid-19 no Sistema Único de Saúde: o caso do Rio Grande do Norte, Brasil. *Ciência & Saúde Coletiva, 26*(6), 2035-2052. <https://doi.org/10.1590/1413-81232021266.04302021>