

Intervention strategy aimed at the prevention and control of COVID-19 in Consolación del Sur

Estrategia intervencionista dirigida a la prevención y control de la COVID-19 en Consolación del Sur

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ABSTRACT

Introduction: COVID-19 is a public health emergency of international importance and a rapidly spreading global epidemic.

Objective: to design a comprehensive strategy of prevention and control of the disease from the local context in Consolación del Sur municipality.

Methods: a study of technological development in health services and systems, of a descriptive and cross-sectional-observational type, carried out with 13 patients infected with COVID-19, and the statement of quarantine status in a community of Consolación del Sur municipality. The design of the strategy, the methodological and technical documents issued by the Ministry of Public Health in Cuba and PAHO/WHO were reviewed.

Results: health actions were designed with an intersectorial approach related to the pre-epidemic stage and the local autochthonous transmission stage; emphasizing on the health actions from the Primary Health Care.

Conclusions: in the international health context resulting from COVID-19, it is necessary to improve health and intersectoral actions involving all of the society.

Key words: COVID-19 / strategy; primary health care; prevention and control of COVID-19.

RESUMEN

Introducción: la COVID-19 es una emergencia de salud pública de importancia internacional y una epidemia mundial de rápida propagación.

Objetivo: diseñar una estrategia integral de prevención y control a la enfermedad desde el contexto local en Consolación del Sur.

Métodos: se realizó un estudio de desarrollo tecnológico en servicios y sistemas de salud, de tipo observacional descriptivo y transversal, que tuvo como universo a 13 pacientes contagiados con la COVID 19, y la declaración de estado de cuarentena en una comunidad del municipio Consolación del Sur. Para el diseño de la estrategia se tomaron en cuenta los documentos técnicos metodológicos emitidos por el Ministerio de Salud Pública de Cuba y organizaciones como la OPS/OMS.

Resultados: se diseñaron acciones de salud con enfoque intersectorial relacionadas con la etapa pre-epidémica y la de transmisión autóctona local, se hizo énfasis en las acciones de salud desde la Atención Primaria de Salud.

Conclusiones: en el contexto sanitario internacional producto de la COVID- 19, se impone perfeccionar acciones de salud e intersectoriales que involucren a todos los actores de la sociedad.

Palabras clave: COVID-19/ estrategia, atención primaria de salud, prevención y control de COVID-19.

INTRODUCTION

On December 31, 2019, Wuhan municipality in Hubei province, China, reported a cluster of cases of pneumonia with unknown etiology. On 30 January 2020, with more than 9 700 confirmed cases in China and 106 confirmed cases in 19 other countries, the Director-General of the World Health Organization (WHO) declared the outbreak of a public health emergency of international concern and applied the advice of the Emergency Committee based on the International Health Regulations. On February 11, 2020, according to World Health Organization (WHO) best practices for naming new human infectious diseases, the disease was named COVID-19, shortness for "coronavirus disease 2019."^(1,2)

On March 11, 2020, the first case of COVID-19 was confirmed in Cuba, from an Italian tourist who was immediately hospitalized.⁽³⁾ Consolación del Sur was the first municipality in the country to report a local event of transmission requiring quarantine, restricted to Camilo Cienfuegos community, where 10 cases of the disease were reported, for a total of 13 positive cases in the municipality.

The purpose of this study is to describe the design of a comprehensive strategy for the prevention and control of the disease, from the local context in Consolación del Sur municipality, Pinar del Rio province, Cuba.

METHODS

A technological development study related to health systems and services was carried out between February and April 2020, aimed at health professionals and inhabitants of Consolacion del Sur municipality, Pinar del Río province, consisting of the design of an intervention strategy for the comprehensive approach to this disease.

The design of the strategy comprised the methodological and technical documents issued by the Cuban Ministry of Public Health and PAHO/WHO; protocols to deal with COVID-19,⁽⁴⁾ the comprehensive program for the prevention and control of acute respiratory infections,⁽⁵⁾ the national program for international health control,⁽⁶⁾ as well as, assessment for the prevention of infection and control practices in areas of isolation in health facilities, in the context of the novel coronavirus (COVID-19),⁽⁷⁾ the strategic plan for preparedness and response to the disease; along with local experiences in dealing with the disease.⁽⁸⁾

The principles of this strategy comprised the level of knowledge of health professionals in the management of the national disease program, the prevalence of a group of actions in making individual arrangements and the development of healthy behaviors.

The external and internal analysis of the organization was developed with the participation of the intervention facilitators, to identify the characteristics of the situation that can influence on the achievement of the proposed objectives, which favors the development of collaborative relationships and teamwork. The focus group approach is applied to identify the subject matter. The elements considered to design the strategy were:

1. Theoretical or cognitive tools: based on the epistemological framework of the COVID-19 model of confrontation and control, which includes the guidelines and protocols for the management of the disease at the primary health care level and the basis for the development of the strategy.
2. Methodological or instrumental mechanism: glimpsed the progress of a skill system. It was conceived with the design of a strategy that included the actions of the pre-epidemic stage and local quarantine, with emphasis on Primary Health Care (PHC), in an intersectoral and integrated method.

The stages of the strategy included:

Stage 1. Characterization of the disease

The characterization of the disease at a global level, in the region of Las Americas, at a national level and in Pinar del Río province, of the confirmed cases and the epidemiological events that occurred. The internal and external forces operating on the incidence of the disease were established through the development of the SWOT matrix. After the problems recorded in the SWOT matrix and with a brainstorming session with the health providers who would intervene in the strategy in the territory, the identification of the health problem was created, where the objectives and concrete functions to achieve these objectives were specified.

Stage 2. Elaboration of the actions

A documentary and bibliographic study was included, as well as the comparison and review of criteria from different authors. Information was collected through participant observation techniques, in-depth interviews, interviews and questionnaires to groups. All the instruments were applied mostly during the course of one month, according to a previously elaborated schedule.

Methodological triangulation was applied to all theoretical and empirical information collected, which included the criteria of specialists linked to the health sector, as well as materials and documents.

All the professionals who participated in the design of the strategy approved it. The rights, interests, and sensitivity of the reports were respected during the collection of information. Ethical issues were constantly reviewed.

RESULTS

The intervention strategy addresses the problem posed from a systemic, broad and cohesive perspective, based on the analysis of the components that interact in the process of prevention and control of COVID-19 in Consolacion del Sur territory. The needs and perspectives of the patients included and the human resources involved were taken into account for their active participation in the strategy. The integrated system of actions that make up the strategy was evaluated from the health services focused on promotion, prevention, early diagnosis and rehabilitation of patients.

Key components of the intervention strategy

- ❖ The integrated action system. Strengthened by intersectorality.
- ❖ The training program for the human resources involved.
- ❖ Systematic participation of the different sectors in the prevention and control program of COVID-19.
- ❖ Constant monitoring to improve the intervention processes.

A group of health care professionals and other workers from different specialties are identified who must be linked to the intervention strategy aimed at preventing and controlling the disease in the municipality, through intersectoral actions between the different bodies of the central government administration, political and mass organizations, the government and public health system; where they comprise the basis for approving the actions and plans. Biopsychosocial care for the sick is a fundamental need, demonstrated by the effects that the pandemic is having on individuals, families and communities.

The organization and structure of the National Health System with its three levels of care, and as a cornerstone the Primary Health Care, appreciating the strengths and opportunities to deal with this disease, in the development of the actions of health promotion, disease prevention, timely diagnosis, treatment and rehabilitation that include Epidemiology, Family Medicine, clinical and diagnostic specialties; as well as other disciplines integrated into the research. (Graph 1)



Graph. 1 Participants in the intervention strategy for the prevention and control of COVID-19. Consolación del Sur. February - April 2020

Actions undertaken in the pre-epidemic stage:

- ❖ Establishment of the temporary working group activated in the Municipal Health Management Office.
- ❖ Update of the plan to deal with COVID-19 or Wuhan Pneumonia in the territory.
- ❖ Implementation of the Municipal Prevention and Confrontation Plan for COVID-19, led by the Municipal Defense Council and with the participation of the Civil Defense.
- ❖ Creation of the multidisciplinary technical team, which prioritizes the classification and conduct of the cases identified by the Basic Health Teams, which included a clinician, a pediatrician, an epidemiologist and a comprehensive medicine doctor.

If the disease is suspected, the patient is referred to the chosen hospital: Dr. Leon Cuervo Rubio Clinical Surgical Teaching Hospital, for the control measures of the outbreak.⁽⁴⁾

Confirmed case: contacts entered into the isolation centers for clinical-epidemiological surveillance and the planned studies of laboratory tests (real-time PCR).⁽⁴⁾

- ❖ The Rapid Response Team (RRT) has been designated and is composed of: specialists in Internal Medicine, Pediatrics, Epidemiology, and graduates or technicians in Hygiene and Epidemiology, a Sanitation worker and a Health Education officer.
- ❖ Developed the plan for professional improvement and training of all health personnel in a staggered manner, according to the learning needs of the disease with emphasis on the Protocol of Action to cope with COVID-19 of Ministry of Public Health (MINSAP).⁽⁴⁾
- ❖ Carrying out a strategy of staggered training outside the sector, with the participation of political and mass organizations, government assistants, state workers and private sectors.
- ❖ Establishment in all public places, workplaces and schools, on a mandatory basis, the measure of hand disinfection with 0,01 % sodium hypochlorite, for admittance to these places.
- ❖ Organization of medical care in all the intensive care units of the municipality.
- ❖ Organization and strengthening of active surveillance of acute respiratory infections (ARIs) in all family doctor and nurse offices, through the Basic Health Teams.

- ❖ Organization of active surveillance in educational and workplaces, with a ban on attendance at these centers by patients with respiratory symptoms.
- ❖ Strict monitoring of ARIs and, if necessary, determination of their home admission by the Basic Health Team.

Several strategies were designed in the municipality due to the current pandemic, these included clinical and laboratory surveillance, follow-up and special studies with the following objectives:

- Maintain knowledge updated regarding the behavior of the disease.
- Establish the susceptibility and risks in the community of this health problem under surveillance.
- Formulate appropriate intervention measures.
- To evaluate the impact or effect of the interventions applied to these problems in the community.
- Organization of active ARIs research with emphasis on vulnerable groups (older adults living alone, patients with chronic non-communicable diseases, pregnant women and children).

The heads of the Basic Working Group organize the active research with the participation of all the workers and students of the Medical Sciences. The students of Pinar del Río University of Medical Sciences, who live in the municipality are involved.

- ❖ Daily and continuous monitoring by the Basic Health Team of the cases reported by the health area related to the International Health Control. If there are travelers with respiratory symptoms, it is considered a suspicious case and is transferred through the Integrated Medical Emergency System (SIUM), to the designated hospital.
- ❖ Focus control of suspected and confirmed cases by the RRT, and certification of the actions described by the municipal team created for this purpose. In this sense, the aim of outbreak control is to prevent their transmission.

The functions of the RRT correspond to those issued in the national plan: ⁽⁴⁾

- ❖ Specialist in Internal Medicine and Pediatrics. They will be in charge of the clinical evaluation of the cases and contacts, determining the behavior to be followed with each one of them (entering or care in surveillance).
- ❖ Epidemiologist. This specialist will verify the adequate protection and correct use of the means of individual protection to be used by RRT members, as well as compliance with sepsis prevention measures. This professional will carry out the epidemiological survey of the cases and will define the radius of action to be worked on, and the persons to be included in the surveillance.
- ❖ Graduate or technician in Hygiene and Epidemiology. This professional will develop the environmental assessment of the house environment where the cases are located and their contacts, indicating the measures to be adopted to minimize the environmental risks that favor the transmission of this viral disease. These professionals will indicate the disinfection actions to be carried out in the environment regarding the control of the source of infection.
- ❖ Sanitation worker. This professional will carry out the disinfection tasks indicated in the control of the source of infection.
- ❖ Health Education Officer. This professional will be in charge of developing the educational and health promotion strategy within the radius of the source of infection.
- ❖ Organization of the differentiated emergency consultation of both polyclinics for ARI cases.
- ❖ Strengthening of health promotion and prevention actions from the PHC, aimed at the prevention of ARIs.
- ❖ Logistical assurance for the surveillance of cases that may enter the municipal isolation centers, as well as means of individual protection for health workers.

- ❖ Activation of two isolation and medical care centers that meet the conditions of respiratory isolation, in sufficient numbers for the amount of patients to be hospitalized by clinical-epidemiological surveillance.
 - ❖ Referral of suspicious cases to Leon Cuervo Rubio Hospital.
 - ❖ Strengthening of health organization and provision of resources in the Municipal Intensive Care Unit with capacity for four hospitalization beds.
 - ❖ Distribution of PrevengHoVir,⁽⁹⁾ homeopathic medicine applied in the municipality for the prevention of influenza, flu diseases, dengue and emergent viral infections. Priority is given to Camilo Cienfuegos community.
- Design of the Communication Strategy on COVID-19 for four stages:
- First stage: before the virus enters the national territory.
 - Second stage: identification of the first possible case of the virus.
 - Third stage: declaration of a virus epidemic within the national territory (extreme negative scenario).
 - Fourth stage: after the disease has been controlled.

The strategy is based on the implementation of a crisis communication plan for the prevention and control of the novel coronavirus, and the planning and implementation of a comprehensive social communication program that provides timely guidance to the population and sectors of society in each of the phases.

Educational materials were designed and produced (brochures, pamphlets and posters), public good messages were posted on social networking sites with the main characteristics and symptoms of the disease, the hygienic and sanitary measures to be adopted to prevent it, the behavior to be followed by the population in case of suspicion of infection by the virus, the development of television spots, interviews with experts in radio and television stations in the municipality, and the operation of community radio bases.

The actions designed and implemented in the territory, at this stage, are aimed at surveillance, investigation and timely assessment of suspicious cases.

Local autochthonous transmission stage

Quarantine consists of restricting activities and separating people who are not sick and are suspected of being infected by the virus, in order to prevent the possible spread.

- ❖ Activation of the Defense Council in the referred community with a group of intersectoral actions that ensure the quality of life of individuals and families in the community.
- ❖ Application of the cordon sanitaire, in order to comply with the regulations established with the participation of the entities of the Ministry of the Interior and the National Revolutionary Police, the personnel who controls the entry and exit points of the quarantined community.
- ❖ Strict restriction of movement in the community.
- ❖ Public acts that generate conglomerates of people are prohibited. Public and work centers are closed. Only those personnel who are indispensable for maintaining public services that give vitality to the community are kept on duty: water supply, food, electricity and waste collection.
- ❖ Prohibition of public transport traffic, only emergency vehicles and those that ensure the vitality of the community are authorized.
- ❖ Social isolation of the community's population.
- ❖ Designation and training of a multidisciplinary technical team for the clinical evaluation of cases, which will work for a period of 14 working days in the affected community, where the actions described above are carried out.

The team consists of medical professionals, nursing, hygiene and epidemiology staff, clinical laboratory, vector operators and psychologists. Evaluation in the field of psychology is vital for maintaining adequate mental health.

- ❖ Ongoing training on the disease is maintained for all health personnel.
- ❖ The population is actively surveyed on a daily basis.
- ❖ The Basic Health Team of the family doctor's and nurse's office receives information on the epidemiological situation of their territory and controls it, which will allow them to improve their research in their area of medical attention.
- ❖ Surveillance and follow-up actions for symptomatic respiratory patients in the affected community are strengthened.
- ❖ Carrying out the control of the source of infection on suspected cases of the disease.
- ❖ Designation and preparation of clinical and microbiology laboratory personnel for the collection of samples for SARS-CoV-2 test and real time PCR, to the patients contacts of confirmed cases.
- ❖ The operation of the two isolation and medical care centers for clinical-epidemiological surveillance is maintained.

DISCUSSION

COVID-19 is a public health emergency of international importance and a global epidemic that has spread rapidly, with health, social and economic consequences.^(1,10,11)

In Cuba, the Strategy for the Prevention and Control of the Novel Coronavirus (COVID-19) was designed in January 2020,⁽³⁾ involving all the Central Government Administration, organizations, enterprises, the private sector and the population in general.

In this sense, the cornerstone for the prevention and control of the disease is considered Primary Health Care (PHC). This primary level of care is recognized as a key component of health systems, based on evidence of its impact on the health and development of the population.^(10,12) The demographic, social, and epidemiological changes that have taken place since the Alma Ata Conference call for an in-depth review of the PHC strategy so that it can respond to the health and development needs of the world's population.

The design of the surveillance actions was based on the main methodological guidelines received from (Ministry of Public Health) MINSAP. The authors agree with the definition proposed by Álvarez et al.⁽¹³⁾ who define it as the systematic and timely collection of relevant and necessary information on any health event in the population. It is applied to population groups in order to know the magnitude and trend of any health problems and then to describe, analyze, evaluate and interpret the data, providing the basis for decision making and its dissemination.⁽¹⁴⁾

The goal of a screening program is to identify as many individuals as possible who can be offered timely and effective treatment to improve the quality of life of each patient during the stage of the disease.⁽¹³⁾

There may even be some confusion between screening and early diagnosis. For Dr. Fernández Sacasas and Dr. Díaz Novas, active research is conceptualized as "diagnostic actions aimed at identifying individual health status in population groups, in order to establish existing risk factors and discover the early hidden morbidity, with the objective of being included in programs (the allocation) to ensure the follow-up and continuous care".⁽¹⁴⁾

The participation of all of the health professionals in the territory, in close connection with the formal and non-formal leaders of the communities, the students of Pinar del Río University of Medical Sciences and the representatives of the political and mass organizations, constitute a strength in this sense. The active research for COVID-19 relies above all on the systematic and periodic clinical exploration of the health care population. The research program considers ethical, social, technological, economic and legal aspects.

In terms of care, the strategy focused on strengthening the organization of health services in the territory, preparing human resources, working methods and types, based on teamwork. On the other hand, the strengthening of the strategy lies in the quality of the proposed actions contextualized to local experiences, the capacity of professionals to carry out periodic evaluations of the implemented actions.

Teamwork as a dynamic, open, and participatory process in the technical, political, and social construction of change in health work, for the application of a new model of care, interdisciplinary work, and community participation; facilitates the definition, development, and evaluation of comprehensive health care competencies at the local level, which provides a revitalization and combination of clinical and public health capacities in health care teams.

The characteristics of teamwork include the relative autonomy of each professional type (guaranteed by the legitimacy of the set of skills that characterizes each one); the interdependence between the different professionals in the implementation of the actions, interdisciplinary and horizontal approach, flexibility, creativity and communicative interaction.

The effectiveness of the strategy is based on the fact that a health system based on PHC is supported by appropriate human resources that include service providers (health, social, and others), community workers, managers, administrative personnel, and the population (individual, family, and community); although all the human resources of the Health System are part of the Primary Health Care Strategy, its teams at the first level of care constitute the essential part in the prevention and timely diagnosis of COVID-19, where a principle of epidemiology is met: the opportunity.

CONCLUSIONS

In the international health context resulting from the COVID-19, it is necessary to improve health and intersectoral actions involving all actors in society. In this sense, the design, development and implementation of intervention strategies contextualized to local characteristics and experiences, contributes to this purpose.

Limitations of the study

The implementation of the strategy must be adapted to the socio-demographic characteristics of the territories concerned, preliminary identification of the SWOT matrix.

Conflicts of interest

No conflicts of interest are declared.

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