

# Southern Philippines Medical Center - One Hospital Command Center

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The Department of Health (DOH), through Department Order (DO) 2020-0653, established a One Hospital Command System (OHCS) to facilitate coordination among health care facilities and enhance the referral system for patients with COVID-19.<sup>1 2</sup> On August 6, 2020, the DOH and the Inter-agency Task Force on Emerging Infectious Diseases (IATF-EID) launched the One Hospital Command Center (OHCC) at the Metro Manila Development Authority Arena, Makati City.<sup>3 4</sup>

DO 2020-0653 also stipulated the establishment of Regional One Hospital Command Centers (ROHCCs) as the regional coordinating bodies of the National OHCC.<sup>1 2</sup> In November 2020, the OHCC for Region XI (Davao Region) was established through the efforts of the DOH, Southern Philippines Medical Center (SPMC), and different private hospitals in Davao City.<sup>5</sup> Pursuant to DO 2020-0653, the Davao Center for Health and Development (DCHD) authorized SPMC, thru its Department of Emergency Medicine, “to establish, operate and manage the ROHCC.” SPMC-OHCC (Region XI OHCC South Area) was designated to be the main ROHCC and would cover Davao City, Davao del Sur, Davao Occidental, and Island Garden City of Samal (IGACOS). On the other hand, Davao Regional Medical Center (DRMC) was designated as the satellite ROHCC and would cover Davao del Norte, Davao de Oro, and Davao Oriental.<sup>5 6</sup>

Recognizing the disease and health care burden attributable to the rapidly increasing cases of COVID-19 and the difficulty in referring and transferring patients across Temporary Treatment and Monitoring Facilities (TTMF)/Quarantine Facilities (QF) and hospitals, the DOH established the OHCS. The rise in incidence of COVID-19 in Davao Region highlighted the region’s initially fragmented response to the pandemic and the pressing need for a more organized prehospital, interfacility, and interagency health care referral network. The ROHCC is expected to strengthen the prehospital COVID-19 management, ensure

coordinated referral of patients among hospitals in the region, ascertain the availability of allocated beds at the receiving facility, and provide a seamless patient conduction system from point of origin to point of definitive care. Moreover, the OHCC is also expected to provide data analytics on health systems capacity and to leverage risk communications to ensure an effective and efficient COVID-19 response.<sup>4</sup>

The DOH created the OHCS to “provide guidance and streamline the referral system for COVID-19 cases as well as to optimize the use of medical care services at a national level for a unified COVID-19 response”.<sup>1</sup> In accordance with the objectives of National OHCC, the OHCC for Region XI aims to “facilitate a comprehensive and coordinated health response by ensuring an effective and efficient health facility referral” in the region.<sup>2</sup> This OHCC also aims to create a referral mechanism within the Health Care Provider Network (HCPN) with guided protocols for pre-hospital care and interfacility transfer of patients with suspected/probable/confirmed COVID-19 and patients with non-COVID-19 emergencies. The HCPN refers to a group of primary to tertiary care providers, whether public or private, where the primary care provider acts as the navigator and coordinator within the network and provides comprehensive, coordinated, and people-centered care.<sup>2</sup>

In March 2020, Davao City established a COVID-19 Operation Center (OPCEN) that caters to individuals who have symptoms consistent with COVID-19. The OPCEN response team is composed of individuals from Central 911, Davao City Police Office, Task Force Davao, City Social Services and Development Office, Bureau of Fire Protection, City Disaster Risk Reduction Management Office, Civil Aviation Authority of the Philippines, Public Safety and Security Command Center, and City Health Office (CHO).<sup>7</sup>

In general, the SPMC-OHCC is responsible for taking calls and triaging patients referred by the Davao City OPCEN, and for conducting these patients to different

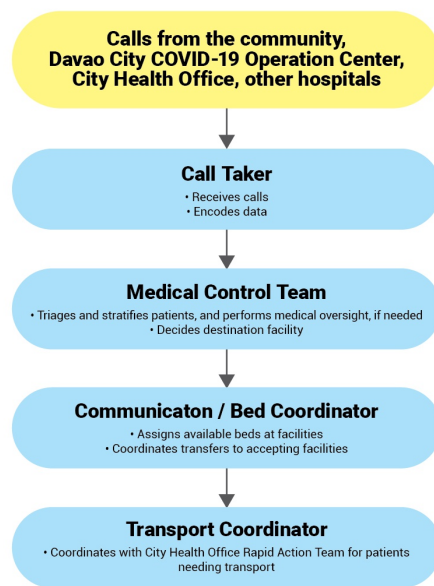


partner hospitals or TTMF. Through the establishment of the OHCS, the government will be able to provide a system that interconnects the services of hospitals and call centers to those of TTMFs, isolation facilities, and DOH-licensed COVID-19 laboratories.<sup>1</sup> This is done through the proper implementation of the OHCC's objective with regard to interfacility referral across different regions. This also means that no patient shall be transferred from one hospital/clinic to another without proper endorsement by the referring facility and acceptance of the receiving facility.

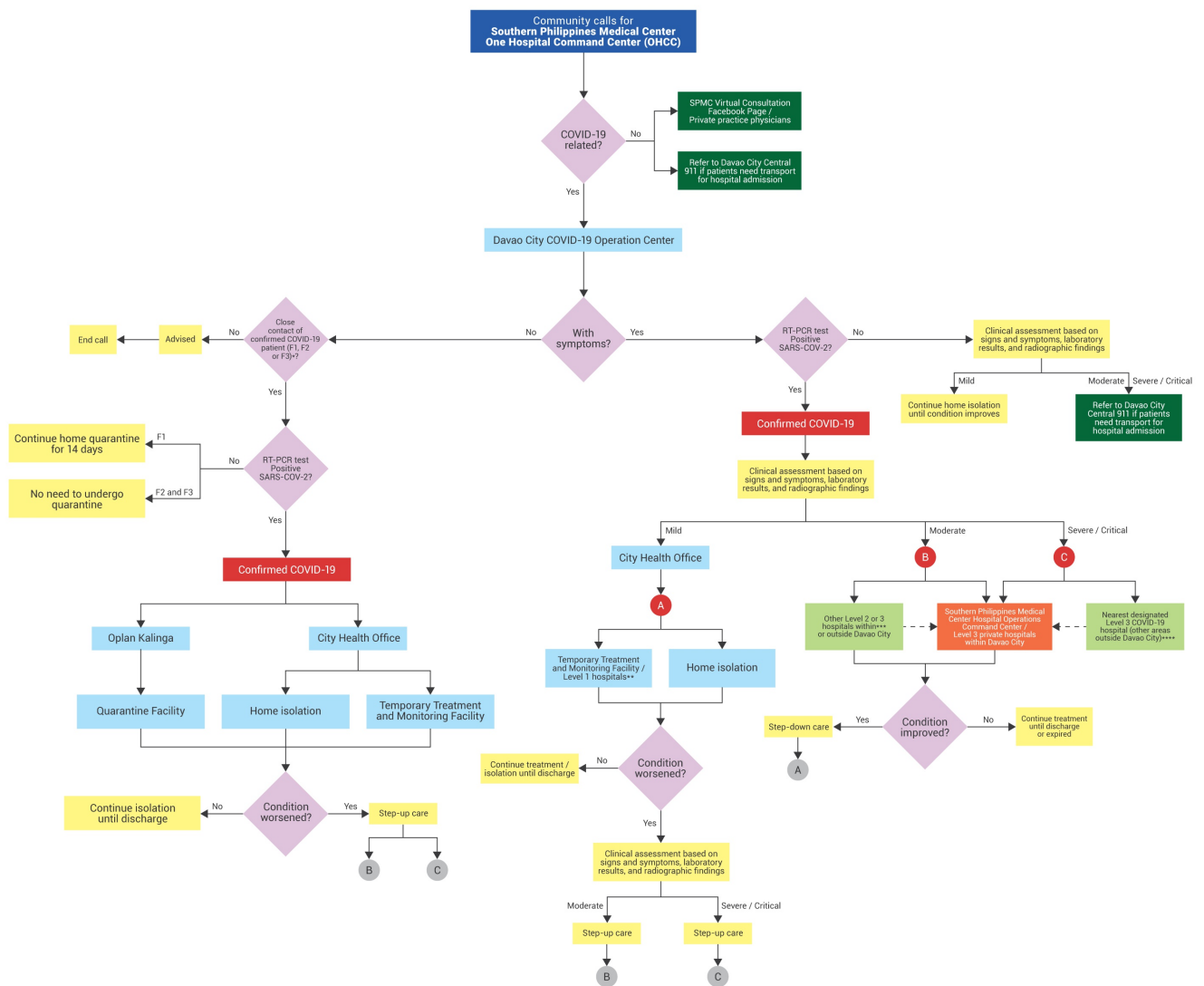
The SPMC-OHCC duty teams and their functions are shown in Figure 1. The OHCC duty teams include the Call Takers Team, the Medical Control Team, the Communication/Bed Coordinators, and the Transport Coordinators. The Call Takers receive calls from the community, OPCEN, CHO, and different referring hospitals, and then forward these calls to their appropriate receiving facility or hotline (e.g., Davao City Central 911), if needed. They also encode patient data into the OHCC database. The members of the Medical Control Team triage and classify patients based on the severity of their condition. Patients are classified as having either suspect, probable, or confirmed COVID-19 based on clinical signs and symptoms and/or Reverse tran-

scription polymerase chain reaction (RT-PCR) test results. Patient classification is also based on the severity of the clinical manifestation of the disease and may either be asymptomatic, mild, moderate, or severe/critical COVID-19. The Medical Control Team members also decide on the patients' destination facility, i.e., SPMC or other Level-2 to -3 private hospitals. The Communication/Bed Coordinators assign patients to available beds allocated for COVID-19 at the accepting facilities and coordinate transfers to these facilities. The Transport Coordinators communicate with the CHO Rapid Action Team (CHO RAT) members who provide the mobile units for patient transport.<sup>2,6</sup>

The process flow of the SPMC-OHCC operations can be seen in Figure 2. All community calls that are COVID-19-related go through the OPCEN personnel who assist callers and address their concerns regarding testing, contact tracing, isolation, and/or patient assessment by their respective district physicians. District health physicians under the CHO determine the facilities for the care of patients with suspected, probable, or confirmed COVID-19—and their contacts—within the patients' respective catchment areas. The Call Takers and the Medical Control Team members classify patients based on the occurrence and/or severity of COVID-19 related symptoms. Symptomatic patients, as well as symptomatic or asymptomatic first-, second-, or third-generation (close) contacts of patients with confirmed COVID-19, all undergo RT-PCR testing. Patients and close contacts with positive RT-PCR test results are classified as having asymptomatic, mild, moderate, severe or critical COVID-19 based on signs and symptoms, laboratory results, and radiographic findings. Under the direction of the CHO, patients with mild COVID-19 may be admitted in TTMFs or may undergo home isolation.<sup>8</sup> (Note: While the DILG issuance uses the term “home quarantine,” in this article, we will use “home isolation” to mean the separation of ill or infected persons from others to prevent the spread of infection.<sup>9,10</sup>) Asymptomatic close contacts who are positive for SARS-CoV-2 are managed by the CHO at the TTMF, or by Oplan Kalinga at the QF, for facility isolation, or they may undergo home isolation. First-generation close contacts who test negative for SARS-CoV-2 continue quarantine at home for 14



**Figure 1** Southern Philippines Medical Center-One Hospital Command Center duty teams and their functions.



\* F1: First-generation contact; F2: Second-generation contact; F3: Third-generation contact.  
 \*\* Level 1 hospitals within Davao City: Holy Spirit Community Hospital of Davao, Inc., St. John of the Cross Hospital, Malta Medical Center, Inc., Tebow CURE Hospital, Davao Mediquest Hospital, Inc.  
 \*\*\* Level 3 hospitals within Davao City: Davao Doctors Hospital, Brokenshire Integrated Health Ministries, Inc., and San Pedro Hospital of Davao, Inc.; Level 2 hospitals within Davao City: Davao Medical School Foundation Hospital, Ricardo Limso Medical Center, Inc., Adventist Hospital - Davao, Inc., Alteredo General Hospital, Metro Davao Medical & Research Center, Inc., Medical Mission Group Hospital and Health Services Cooperative, Gig Oca Robles Seaman's Hospital Davao, Anda Riverview Medical Center, Inc.  
 \*\*\*\* Davao Regional Medical Center (Satellite OHCC), Northern Mindanao Medical Center, Cotabato Regional Medical Center, etc.

Figure 2 Southern Philippines Medical Center-One Hospital Command Center process flow.

days. Patients with moderate COVID-19 go to either Level-2 or -3 private hospitals, or to SPMC, through the SPMC Hospital Operations Command Center (HOCC), for admission. Those with severe or critical COVID-19 are admitted in SPMC or Level-3 private hospitals in Davao City, or in the nearest designated Level-3 COVID-19 hospital (for areas outside Davao City). Symptomatic patients who test negative for SARS-CoV-2 are treated accordingly, depending on the severity of their symptoms. Those with mild symptoms are advised to continue isolation at home until their condition improves. The OHCC coordinates

with Davao City Central 911 for the prehospital care of patients with moderate or severe symptoms who need transport for hospital admission. In addition, when the clinical condition of a patient with confirmed COVID-19 worsens or improves, the physician assigned at the admitting facility, or the assigned district physician who monitors the patient at home, decides whether the patient should undergo step-up care (from home isolation/QF/TTMF to hospital) or step-down care (from hospital to home isolation/QF/TTMF), respectively. Community callers with concerns that are not COVID-19-related are either directed to the

SPMC Virtual Consultation Facebook page or advised to have teleconsultations with private practice physicians. However, callers who need patient transport to a hospital are advised to contact Davao City Central 911 directly.<sup>2</sup>

Currently, SPMC-OHCC has 18 partner hospitals in Davao City, composed of Southern Philippines Medical Center, as the only government hospital, and 17 private hospitals (Davao Doctors Hospital, Broken-shire Integrated Health Ministries, Inc., San Pedro Hospital of Davao, Inc., Ricardo Limso Medical Center, Inc., Anda Riverview Medical Center, Inc., Alterado General Hospital, Adventist Hospital - Davao, Inc., Davao Medical School Foundation Hospital, Gig Oca Robles Seamen's Hospital Davao, Medical Mission Group Hospital & Health Service Cooperative, Metro Davao Medical & Research Center, Inc., Tebow CURE Hospital, Davao Mediquest Hospital, Inc., Holy Spirit Community Hospital of Davao, Inc., Isaac T. Robillo Memorial Memorial Hospital, Malta Medical Center, Inc., and St. John of the Cross Hospital). Several TTMF and QF, also partner, through their respective LGU OPCENs, with SPMC-OHCC to house asymptomatic individuals and patients suspected or confirmed to have mild COVID-19.

Dr. Benedict Edward Valdez, the head of SPMC Emergency and Trauma Complex, was appointed by Department of Health Region XI Regional Director Dr. Annabelle P. Yumang as the Operations Head of SPMC-OHCC.<sup>5</sup> The SPMC-OHCC is operated by: doctors and nurses from SPMC-Health Emergency Management Bureau; active consultants, junior consultants, and the chief resident of the Department of Emergency Medicine; newly-employed administrative staff assigned at the center; and several staff deployed by the Armed Forces of the Philippines to the center. Currently, the SPMC-OHCC office is located in the Emergency Department Conference Room of SPMC. Since its establishment, the SPMC-OHCC has been able to process more than 5,100 calls from all over Mindanao.

The implementation of the OHCS, however, is not without problems. Some of the challenges encountered within the HCPN include lack of specialist doctors and support staff, low supply of emergency medications, and insufficient numbers of hospital beds intended for COVID-19

patients, especially in private and rural hospitals. Since the SPMC-OHCC started with only mobile phones during its establishment, there is a need for enhanced telecommunication support within the command system. At present, even with the addition of more call takers and computers/laptops, the OHCC needs an equipment or a system (e.g., Private Branch Exchange Systems) that will link all the phones across multiple locations in the referral network.<sup>7</sup> This will provide enough lines to connect to referring facilities, allow more incoming calls to pass through, and provide a flexible call routing feature that will automatically forward calls to specific receivers.<sup>11</sup> This advanced communication system will help modernize and scale up OHCC activities, and lead to a more seamless and coordinated COVID-19 response, not just in Davao City, but all over the region. Hospitals have also reported substantial challenges in maintaining or expanding their bed capacities to cater to both COVID-19 and non-COVID-19 patients. Moreover, lack of personnel, shortages in ventilators, logistical support, and critical supplies, like oxygen and personal protective equipment, have greatly hampered the hospital's ability to expand its care to cater to more patients as COVID-19 cases surge.

In our continuous battle against COVID-19, our country's health system has incessantly faced numerous unprecedented challenges especially brought about by the emergence of new SARS-CoV-2 variants and the insufficient supply of vaccines. The whole nation is coming together to combat this pandemic, bringing the government, private institutions, and different individuals to join forces to address the socioeconomic impact of COVID-19. Having a unified operations center for COVID-19-related concerns at the local level ensures that health care is properly delivered, public health activities are safely conducted, and important data are collected, utilized, and reported in a consistent manner.

Overall, the SPMC-OHCC provides an opportunity for different clinical departments, partner institutions, and even other sectors outside of health care to collaborate and strategize for system improvements in our response to this global health crisis. With the help of the government, the private sector, and the general public, the OHCC operations provide an efficient COVID-19

response and prevent local health systems from becoming overwhelmed. As such, the OHCC acts as a director that plays a pivotal

role for the command, control, communication, and coordination of health care activities during the COVID-19 pandemic.

#### Contributors

JMBH, FJMG and BEPV contributed to the conceptualization of this article. All authors wrote the original draft, performed the subsequent revisions, approved the final version, and agreed to be accountable for all aspects of this report.

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