



# OPERATING ROOM MANAGEMENT OF A TERTIARY HOSPITAL: BASIS FOR ENHANCED POLICIES AND MITIGATION PROTOCOLS

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## Chapter I INTRODUCTION

### Background of the Study

On December 31, 2019, a new Coronavirus strain outbreak was sighted in Huanan Seafood Wholesale Market, Wuhan, China. Last January 30 of 2020, the WHO Director-General Dr. Tedros Adhanom Ghebreyesus declared the novel coronavirus outbreak a pandemic, making it a public health emergency of international concern (PHEIC) (WORLD HEALTH ORGANIZATION EUROPE, n.d.). This pandemic had brought in a lot of challenges that even well-developed healthcare systems have difficulty coping with. As a health emergency, the health sector had been brutally exhausted since the pandemic's start. Countries are trying to find the most effective measures to 'flatten' the curve, to lessen the exhaustion of health facilities. In the Philippines, the first case of COVID-19 was officially reported on January 30, 2020. As of February 1, 2022, there has been a total of 3.57M COVID-19 cases in the Philippines, with 54,000 deaths (Ritchie et al., 2022). The country has faced its equal share of challenges, and the health sector has been on top of it. As a developing country, the Department of Health had a shortage of personal protective equipment (PPE), ventilators, ICU, and isolation beds (Pajaron, 2020). Adding to it are the insufficient number of health care workers and the rising COVID-19 cases among health professionals, affecting health care services in hospitals.

Davao City, one of the metropolitan cities in the country, had enforced policies to mitigate the risk and spread of COVID-19. The city government designated the only government tertiary hospital as the primary institution to cater to COVID-19 cases to protect healthcare workers in private hospitals and non-COVID-19 patients from acquiring workplace-related transmission of the virus (Lacorte, 2021). Although this helped mitigate the number of cases in private hospitals, this had brought much strain among healthcare workers of the assigned government hospital.

The primary institution enforced numerous changes to continue healthcare services among COVID-19 patients. The 1500-bed capacity hospital had to reduce beds' appropriation to 1259 to achieve proper distancing and isolation. Since emergency surgeries in the operating room were still in demand, implementing modifications to maximize resources was necessary. The changes in both the structural and operational procedures helped mitigate the surge of COVID-19 (Astudillo, 2020). However, healthcare workers were still at risk. On January 29, 2022, 891 said hospital employees contracted the virus with mild to moderate symptoms. The hospital has sought an additional workforce from the Department of Health and the city but had failed due to the department's same issues (Tocmo, 2022).

The operating room, one of the busiest areas in the hospital, posed a higher risk of spreading the virus. With that, it was dire necessary that hospitals develop safe medical practices, infection prevention protocols, and safety management to maximize all available resources without compromising the safety of the healthcare workers (Nazir & Gupta, 2021).

This assessment could help devise and revise the hospitals' approach in mitigating COVID-19 among its healthcare workers.

### **Objectives of the Study**

This study aimed to determine a Tertiary Hospital's Operating Room Management for enhanced policies and mitigation protocols.

Specifically, the study aimed to determine the following:

1. The respondents' Sociodemographic profiles regarding age, sex, years in service and position/designation.

2. The operating room management as a whole, and when respondents were classified according to age, sex, years in service, and position/designation.
3. The significant differences in the government hospitals' operating room management when respondents were classified according to age, sex, years in service, and position/designation.
4. The themes generated in providing services to COVID-19-positive patients inside the operating room.
5. The themes generated on the hospital's changes to mitigate the spread of COVID-19 inside the operating room.
6. The suggestions or recommendations on the current policies inside the operating room to better mitigate future exposures to and from COVID-19.
7. The COVID-19 mitigation policies/protocols that can be crafted based on the study results.

## Hypothesis

There were no significant differences in the government hospitals' operating room assessment when respondents were classified according to age, sex, years in service, and position/designation at .05 alpha level.

## Theoretical Framework

Principles of Scientific Management Theory Applied to the Operating Room of Frank and Lillian Gilbreth. It states that in managing an organization, there must be an emphasis on the efficiency of the employees to attain the desired results with minimum time and effort. By eliminating unnecessary activities of people in the operating room enhancing the process and the management, there could be an improvement in the quality care of healthcare workers towards their patients (Baumgart & Neuhauser, 2009).

General systems theory believes that each part is necessary to make a whole. It believes in a systematic concept where input, process, and output should not be compromised. Also, this theory emphasizes the power of feedback coming from the external environment to aid in evaluating, correcting, and minimizing errors within the organization (Amin, 2018).

The General systems theory is commonly used in the health sector due to the multiple factors influencing health services. Understanding how these factors operate independently and interdependently can help create and integrate people, processes, policies, and organizations to promote better health services (Kaplan et al., 2013). In this time of pandemic, the ultimate goal of every hospital is the safety of both patients and healthcare workers, and the quality of healthcare it can provide. To attain such, it requires the participation of the entire healthcare system, it follows that the improvement of health care needs to be based in a systematic appreciation of the whole system that contributes to those outcomes; this then works hand in hand with the principles of scientific management.

### Conceptual Framework

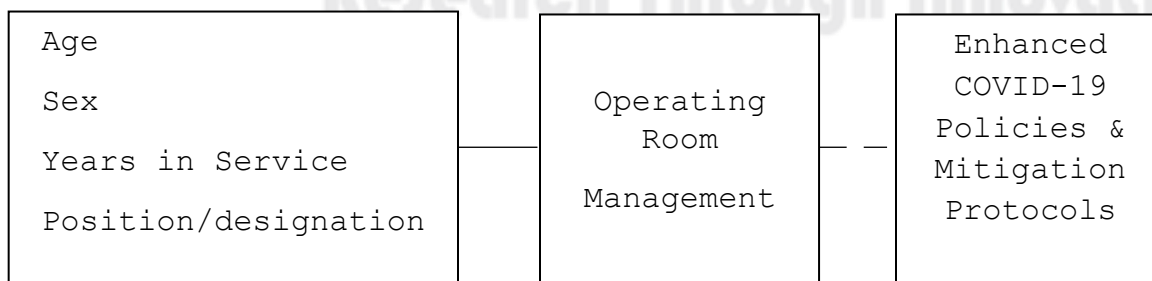
The researcher believed that assessing the hospitals' operating room management during COVID-19 can help create better policies that would directly benefit operating room assigned employees affecting the whole management of the hospital as a health service provider during the pandemic. The assessment was considered essential feedback for the betterment of the hospital management. The hospital's operating room management evaluation (dependent variable) done by healthcare workers composed of Anesthesia residents, Nursing, and Non-nursing staff of different ages, sex, positions/designation and vary in the number of years in service (independent variables) would determine and help craft additional and new COVID-19 policies and mitigation protocols.

The assumed flow of the variables used in this study is shown below.

### Research Paradigm

#### Independent Variables

#### Dependent Variable



**Figure 1.** The schematic Diagram shows the relationship between the independent variables sex, age, years in service, and position/designation and the dependent variable, operating room management.

## Significance of the Study

**Healthcare Workers.** This study will be of great significance for the healthcare workers assigned in the operating room since the results of this study can improve management policies concerning COVID-19, prioritizing their safety and reducing workplace-related transmission of the virus.

**Government Hospitals.** This study will highly benefit the government hospital chosen and others, for the results can be used to evaluate their current management policies and protocols. This can then help enhance, devise, and revise its approach in mitigating COVID-19 among its healthcare workers and their patients.

**Davao City.** The city being the main implementor of policies for COVID-19 is also considered the helping hand of the government hospital. This study can contribute to the city-wide management policies to mitigate COVID-19 cases among healthcare workers in the government hospital and other healthcare facilities in the city.

**DOH XI.** The DOH XI can benefit from this study for it can help assess and evaluate policies implemented by the regional department in relation to COVID-19. As a regulating body, this study can also be used as a yardstick in creating COVID-19 related management policies in other hospitals within the region, in preparation for future pandemics.

**Patients/Covid Patients.** This study will benefit the patients because it will help lessen their risk of acquiring hospital-based COVID-19 exposure in the operating room. Patients who the healthcare workers give service can be assured of their safety within the hospital, especially in the operating room.

**The Researcher.** This study will enhance the knowledge of the proponent regarding the importance of policies to mitigate the risks brought by COVID-19 in the hospital setting. The proponent can use this research to give insights to other people on the actual scenario faced by the healthcare workers just to provide health services to the people in this pandemic.

**Future Researchers.** This study can be of great significance for future researchers who would like to delve more into the aspects of hospital management in relation to COVID-19. This can be used as a yardstick for a wider scope study on policies and COVID-19 in government hospitals.



## Scope and Limitations of the Study

The focus of this study was to determine the operating room management of the chosen government hospital in Davao City and will not dwell on the assessment or evaluation of the overall management and operations of the hospital. This study was limited only to the healthcare workers composed of Anesthesia Resident, Nursing, and Non-nursing staff with permanent duty assignments in the operating room during the COVID-19 pandemic from 2021-2022. A total of one hundred twenty- six (126) healthcare workers were chosen through complete enumeration. Of the population of 126 operating room assigned healthcare workers, only 121 responded willingly as the study respondents. Three declined to participate, and the other two were under quarantine.

An adapted Questionnaire checklist from the World Health Organization was utilized. The data gathered were subjected to the following statistical tools: frequency count, percentages, mean, standard Deviation, t-test for independent samples, and One-way ANOVA. The significance level is set at .05 alpha. For anonymity, the hospital's administration requested the researcher not to mention the name of the said hospital.

## Definition of Terms

For clarity and understanding, the following terms are defined conceptually and operationally:

***Tertiary Hospital.*** A hospital that has capabilities for providing medical care to cases requiring sophisticated diagnostic, therapeutic equipment, and the expertise of trained specialists and sub-specialists (Department of Health, 2020).

*Tertiary Hospital* in this study, refers to the chosen government hospital where the study was conducted.

***Operating Room.*** An operating room (OR), also known as an operating theatre, is the unit of a hospital where surgical procedures are performed (Encyclopedia.com, 2019).

The *operating room* in this study refers to the government hospital's area where emergency cases for operation during the COVID-19 pandemic are made.

***Operating Room Management.*** Operating room management refers to the scheduling, safety, and efficiency measures in the operating room (Cambridge University Press, 2012).

*Operating room management* in this study refers to the safety policies, procedures, and availability of Personal Protective Equipments in mitigating the spread of COVID-19 in the operating room.

**Management.** Management is a process of planning, decision making and controlling the human resources of an organization to reach its goals efficiently and effectively (iEduNote, 2022).

*Management* in this study refers to the hospital's plans and processes in mitigating the spread of COVID-19 inside the operating room.

**Policies.** A deliberate system of guidelines to guide decisions and achieve rational outcomes. A policy is a statement of intent and is implemented as a procedure or protocol.

*Enhanced policies* interchangeably used in this study, which refers to enhancement of the existing policies for a better management processes and rules inside the operating room to mitigate the transmission and exposure of COVID-19 among healthcare workers and patients.

**Protocols.** A system of rules that explain the correct conduct and procedures to be followed in formal situations (Meriam Online Dictionary)

*Mitigation Protocol/s* were interchangeably used in this study to enhance and strengthen the existing actionable risk strategies, monitoring metrics, and plans to promote a safe and effective operating room environment.



## Chapter II

### REVIEW OF RELATED LITERATURE

#### Related Concepts

##### *COVID-19*

Discovered last December 2019 in Wuhan, China, COVID-19 is a disease caused by the SARS-CoV-2 virus. The nature and behavior of the virus in its early phase were not yet thoroughly explored. What was known is the virus is highly contagious, allowing fast transmission around the world. Like other respiratory viruses, SARS-CoV-2 spreads through droplets projected through your nose and mouth. Genetic changes to viruses happen due to their capability to adapt to the body and the environment.

As to the Centers for Disease Control and Prevention (2021), the SARS-CoV-2 virus has constantly been exhibiting mutations, changing its attributes of the virus. As the virus mutates, information and knowledge regarding the virus also change along with it. These changes are called variants, affecting the effectiveness of treatments, management, and policies enforced before they mitigate it.

##### *Challenges in the Health sector*

COVID-19 has affected the health sector so much that countries have been exerting more effort and focus on health policies these past years. Combating a new unfamiliar virus has depleted financial, human, and medical resources.

##### *Hospital Bed Allocation*

As soon as the virus struck people across countries, hospitals had to prioritize COVID-19 cases, which ate up most of the population. Policies regarding bed allocation were created to give way to more COVID-19 admissions. According to Global Data Healthcare (2020), lack of hospital funds and the unexpected effect of the virus were factors for the hindered expansion and allocation of extra hospital beds in hospitals around the world. To give way, hospitals had to shift their management policies to give up non-urgent surgeries to increase hospital bed space by at least 10%. By lessening surgical procedures, recovery rooms were used as additional beds for COVID-19 patients.



In a survey conducted by the U.S. Department of Health and Human Services last March 23-27, 2020, one of the challenges faced by hospitals across the United States of America was the difficulty of maintaining and expanding hospital bed capacity. Hospital bed concerns emerged as hospitals became overwhelmed with the unexpected surge of COVID-19 patients. More rooms and beds were needed to cater to the influx of patients requiring special beds for moderate to severe cases (U.S. Department of Health and Human Services, 2020). Davao City has assigned the only government hospital to cater to COVID-19 patients. Despite being one of the largest hospitals in the country, it still encountered bed shortages.

The hospital has a 1500-bed capacity, but due to restrictions and modifications for isolation, it was reduced to 1259 beds: 35 ICU beds for critically ill patients with COVID-19, 205 beds for patients with mild or moderate COVID-19 symptoms, and 1019 beds for patients with diagnoses other than being positive for COVID-19. Inpatient census dropped from an average of 5,956 admissions per month before the start of community quarantine in March to 3,134 admissions per month (Astudillo, 2020).

#### *Hospital PPE resources*

With the sudden outbreak of the virus, many health facilities were forced to face the pandemic with their remaining resources. As the virus spread all over the world, medical resources got scarce. In the same study conducted by the U.S. Department of Health and Human Services among 323 hospitals, PPE shortages were reported to have been the second most crucial effect in the first phase of the pandemic. Staffs and patients are at risk due to the widespread shortages of PPE. The lack of a robust supply chain and the heavier use of PPE than normal contributed to the shortage and delayed or prevented the hospitals from restocking the needed PPEs to protect the staff, and the uncertainty of the availability of PPE from Federal and State sources was reported by hospitals (Astudillo, 2020).

In another survey conducted by the Society for Healthcare Epidemiology of America, 69 healthcare facilities in the United States and Canada were adapting and managing their PPE policies and resources as shortages occurred. Based on the data collected, 52% said they had to impose upon healthcare workers to reuse the same disposable N95 mask for an average of a day. Some healthcare workers had to improvise to add another layer of protection to their used surgical masks to preserve them until subsequent usage. Shortage of

PPES, disinfectants, and test kits added to the burden of healthcare workers, risking their exposure to patients and staff who were pre-symptomatic and or asymptomatic. The authors recommended that health sector authorities consider healthcare workers' policies, protocols, and PPE practices to create unified guidance providing reassurance to healthcare workers (Beusekom, 2020).

The Philippines had no escape in its share of PPE scarcity experiences. A report by CNN Philippines (2021) reported that the shortage of PPE was a massive problem in the Philippines during the first phase of the pandemic in 2020. Healthcare workers had to innovate to continue working and treating COVID-19 patients. Some had to wear PPEs made from garbage bags as an alternative to protective coveralls or fluid-resistant aprons. The scarcity of PPEs and the quality of some left and available make healthcare workers uncomfortable due to the fear that they might get infected, especially in specific procedures where the highest level of PPE is required. In a journal published by the Oxford Academic Journal of Public Health, the shortage of medical supplies and protective equipment resulted in many deaths among healthcare workers (Tutor & Pascual, 2021).

### *Healthcare workers*

The healthcare workers, also known as the new heroes of today's time, have contributed a lot to this pandemic; some even cost their lives with it. Hospitals are challenged not only with infrastructural, medical, and financial resources but also with human resources. Healthcare facilities report a shortage of allied and healthcare workers due to their work. The number of cases outweighs the hospital staff who can provide healthcare support to the facility. Hospitals reported a shortage of specialized providers needed to meet the anticipated patient surge and raised concerns that staff exposure to the virus may exacerbate staffing shortages and overwork. Hospital administrators also expressed concern that fear and uncertainty were taking an emotional toll on staff professionally and personally (U.S. Department of Health and Human Services, 2020).

According to the International Council of Nurses (2020), an estimated 90,000 or 6% of COVID-19 cases are healthcare workers infected worldwide. In the Philippines, a total of 2,710 COVID-19 cases among

healthcare workers were reported as of June 6, 2020. As we battle this pandemic, protecting healthcare workers to sustain the operation and services of the hospital should be among the priority.

### *Risks in the operating room*

COVID-19 brought many changes in the hospital setting, and the operating room is one of the most affected areas. Even with the surge of COVID-19, it is still a fact that a lot of patients have to undergo surgeries. Because of the virus, health providers found ways to provide medical care that lessens face-to-face interaction and contact, like telehealth medicine. However, according to a journal by Kibbe (2020), surgical procedures cannot just adapt to the same method because surgical procedures for patient care require practical skills among the healthcare workers involved. With that, operational management of the operating room has faced immense challenges compared to nonsurgical treatments during the pandemic. Surgical-related procedures require a functional workforce with optimum protective resources, but the overall health system was affected by COVID-19 exposure among workers and patients and the added PPE shortage.

A cross-sectional study conducted among hospitals in Tabriz City, Iran, found that the surgical team is highly exposed to the disease during surgical care of the patient with confirmed COVID-19. Hence strict compliance with the safety policies and preventive standards against virus transmission in the operating room is crucial (Lotfi et al., 2021). During surgical operations, aerosolization and droplet transmission of the virus in an enclosed space are contributing hazards for healthcare workers involved in the procedure. Among these healthcare workers, the Anesthesiologists are highly exposed to this because of the nature of their work, like endotracheal intubation procedures. Also, nurses and medical aides can get infected with procedures, including bodily fluids (American College of Surgeons, 2020).

According to Mohammadi et al. (2021), several operating room healthcare workers have been infected with COVID-19, and some have lost their lives. With the hustle and bustle of people in this pandemic, awareness of these challenges gets less as days pass. Operating room staff is faced with uncertainty during the COVID-19 crisis.

Hence, proper management with a solid basis is essential in designing strategies and policies to control infection inside the operating room.

### *Safety protocol and management recommendations*

According to the Brazilian College of Surgeons (CBC), Brazilian Society of Integrated Trauma Care (SBAIT), and the Brazilian Chapter of the American College of Surgeons, there must be “a hospital policy to manage patients in the operating room (OR) with known or suspected infection by COVID-19”. The following are recommendations:

- (1) *The operating room* should be a dedicated room for COVID patient care, preferably an easily accessible area, with minimal contact possible with other rooms, to prevent contamination of considerable extension;
- (2) The patient should arrive through an exclusive door (when possible), located next to the dedicated room for the Covid-19 patient;
- (3) The patient must leave through the same access;
- (4) The dedicated room for the Covid-19 patient should have an anteroom;
- (5) The room temperature should be kept adequate to ensure neutral or negative pressure;
- (5) When there is no negative pressure option, it is important to allow at least 30 minutes between cases for complete exchange of the ambient air;
- (6) Doors should remain closed during the procedure and
- (7) there should be a sign at the room's door regarding the recommended precaution (contact and aerosol).

### *Equipment*

- (1) Only equipment, furniture, and necessary medicines should be taken to the procedure room to reduce the number of items that need to be cleaned or discarded;
- (2) The use of disposable equipment/materials should be prioritized;
- (3) The anesthesia machines, monitors, ultrasound devices and such should be protected with disposable plastic to reduce equipment contamination; and
- (4) High-Efficiency Particulate Air (HEPA) filters should be used in the anesthesia circuit, with the capnography system set between the circuit and the filter.

### *General care*

Wash hands before and after placing and removing the PPE and use appropriate Personal Protective Equipment (PPE) (cap, waterproof apron, glasses, face shield, N95 mask, gloves with long cuffs, closed and

waterproof shoes that can be disinfected) - according to the PPE use guidelines in COVID 19 suspected cases(Cunha et al., 2020).

### *Operating room*

The operating room is considered one of the most important facilities in the hospital. Generally, the operating room is where all surgical procedures are made. In this room, patients put their lives in the hands of trained healthcare workers who work together to perform surgeries. The operating room team often includes medical doctors like surgeons and anesthesiologists. A surgical team will not be complete without the nurses who assist the doctors. Also, non-nursing staff, like aides and technicians take part in the surgical process by extending services to the whole team when needed (City College, 2022).

In a surgical area, it is the top priority to maintain a sterile environment for all health care professionals entering the operating room. This is to minimize the spread of microorganisms that could cause infection.

A surgical location must be a sterile environment where all personnel must wear protective clothing called scrubs. They also wear shoe covers, masks, caps, eye shields, and other coverings to prevent the spread of germs. Brightly lit, calm, and provided surgical tools, patient, and diagnostic monitoring equipment(Doyle & McCutcheon, n.d.).

### *Policies under the tertiary hospital.*

#### **Cleanliness of the Operating Room**

1. Daily personal cleanliness is essential for operating room personnel.
2. Before performing the duties described in the following paragraphs for preparation of the operating room, the circulator should wash his hands thoroughly and don a surgical cap.
- 3.The surgical cap must cover the hair completely to prevent possible contamination of the sterile area by falling hair or dandruff.
- 4.He/She should then don a clean, cotton scrub suit before entering the semi-restricted areas of the surgical suite.
- 5.Before entering a restricted area, the OR specialist must don a surgical mask. The mask must change snugly around the nose and mouth to filter the air through it rather than around the sides of the mask.



6.The mask should be changed whenever it becomes damp and after each procedure.

7.Damp dust the operating room unless personnel has already done this on the previous shift.

8. Concurrent with dusting, checking equipment, arranging furniture, and restocking supplies.

9. After damp dusting with a cloth soaked in disinfectant solution prescribed by local policy, wet vacuum the floor using a disinfectant prescribed by local policy.

10.Dry dusting and mopping are never done in the operating room because they raise dust-containing bacteria.

11.Damp dusting should be done before the first scheduled incision time of the day.

12.Establish and follow a definite order when damp dusting furniture. Start with the tallest equipment and work down since this method helps the settling of airborne microorganisms;

a. Damp dust the operating room overhead light first, then the operating table.

b. Work from the center of the room to the perimeter (outer limits) and from the tallest item to the lowest.

c. If you are called from the room, leave the damp dusting cloth on the item being dusted; this will serve as the starting point when resuming dusting duties.

13.As the damp dusting is accomplished, set up the equipment and check each item for proper functioning. This will save time and energy. This includes such things as:

a. Switch on the overhead light to ensure the proper functioning

b. Check the operating table for proper working order

c. Check the suction machine, the electrosurgical unit, and other pieces of equipment in the operating room whether or not they are to be used

d. Line the kick buckets with plastic bags

e. Check the supply cabinets for stock. Restock, if necessary

14.The monthly maintenance day of the operating room is every first Monday of the month. Total cleaning of any area, including hallways, floors, sub-steriles, scrub/utility areas, and sterile storage areas.

All areas and equipment in the surgical suite should be cleaned according to this established schedule.

15.Routine cleaning of the operating room and all OR suites after every surgical procedure and in

every shift.

16. The hospital Infection Control unit takes culture samples periodically.

Operating Room Cleaning Schedules	
Areas requiring daily cleaning	Surgical lights and tracks
	Fixed-ceiling mounted equipment
	Furniture and mobile equipment, including wheels
	OR and hall floors
	Cabinet and push-plate handles
	Ventilation grills
	All horizontal surfaces
	Sub-sterile areas
	Scrub and utility areas
	Scrub sinks
	Ventilation ducts and filters
Areas requiring routinely scheduled cleaning	Recessed tracks
	Cabinets and shelves
	Walls and ceilings
	Sterilizers, warming, cabinets, refrigerators and ice machines

### *Infection Control*

Infection control is an essential component of any health care delivery. Infection control measures can be as simple as hand washing and as sophisticated as high-level disinfection of surgical instruments. Implementing these measures can prevent disease transmission in health care settings and the community. The operating room functions to provide a controlled environment for the performance of surgical procedures. Surgical wound infections are the second most common nosocomial infection and may involve either the incision or adjacent structures. Most surgical wound infections result from microbial contamination (endogenous or exogenous source) of the wound during surgery. Operating room procedures are designed to provide the maximum reduction of exogenous microorganisms that could contaminate the surgical wound. Personnel and their compliance with surgically aseptic procedures are critical in preventing surgical wound infections.

### *Employee Health*

Careful attention to employee health, safety, and personal hygiene will minimize the potential for acquiring or transmitting disease.

1. Personnel working in the OR shall be free from active infection. Vaccinations should be current to provide backup protection when there has been a failure in work practices. Those with signs and symptoms of infection must report to the supervisor/charge nurse, who will refer them to the Personnel Health Services (PHS) for evaluation. Those with communicable infections shall be excluded from working in the OR until the PHS has cleared them.
2. An employee who feels he/she has been exposed to a communicable disease or occupational exposure (i.e., needle stick or sharps injury) must report immediately to his/her supervisor, who will send the employee to the Infection Control Unit.
3. Will become familiar with and adhere to policies set forth in the Infection Control Manual.
4. Protective barriers will reduce the risk of skin and mucous membrane exposure to potentially infectious materials.
5. Follow hospital policy on "Standard Precautions" for protection against blood borne pathogens and demonstrate competence in preventing transmissible infections.
6. Will use contact, droplet, or airborne precautions as appropriate when providing care for patients who are known or suspected to be infected or colonized with microorganisms.
7. Will report promptly any suspected communicable diseases, occupational injury, or infectious exposures to the infection Control Unit for evaluation, treatment, and follow-up.
8. Will adhere to good hygiene practices. Hair, body, and nails should be clean at all times.
9. Neither nail polish nor artificial nails shall be worn. Fingernails should be kept short and clean and should not extend beyond the fingertips.
10. Will practice frequent and thorough hand washing with appropriate soap before and after each patient contact.
11. Will utilize work practices designed to minimize the risk of exposure to pathogens.
12. Work practice controls include prohibiting eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses in work areas where there is a reasonable likelihood of occupational exposure to bloodborne pathogens. Activities involving hand-to-nose, hand-to-mouth, or hand-to-eye action can contribute to indirect transmission.

13. Will report suspected trends or problems related to infection control to the Infection Prevention and Control Unit.

### *Airborne Contamination and Ventilation Systems*

**Airborne Contamination:** One of the primary goals of the surgical team is to reduce or minimize the count of bacteria-carrying particles in the air.

**Ventilation Systems:** Should be designed so that air-flow patterns will not allow air contaminants to enter clean areas. Air should flow from areas of positive pressure to areas of negative pressure. The quality of air entering the operating rooms should be carefully monitored.

1. Air should be filtered through two filters; the first filter should be rated 30% efficient and the second at 90% efficient.
2. Operating Room ventilation is maintained at positive pressure concerning the corridors and adjacent areas because positive pressure prevents airflow from less clean areas into more clean areas. All air should be introduced from the ceiling and exhausted at the floor.
3. Operating Room doors should be kept closed except as needed for passage of equipment, personnel, or the patient to reduce the microbial level in the air.
4. A minimum of 20% of the incoming air (three air changes per hour) should be from the outdoors.
5. Operating rooms should have a minimum of 15 air exchanges per hour with a recommended range of 20 to 25 exchanges.
6. Soiled decontamination and sterilizer loading/unloading should have a minimum of 10 air exchanges per hour.
7. Sterile storage, preparation, and packaging should have a minimum of 4 air exchanges per hour.
8. Free-standing fans, humidifiers, or dehumidifiers should not be used in the operating room or sterile processing due to disrupted air-flow patterns resulting in contamination of the sterile field.

## Foreign Studies

The COVID-19 pandemic has affected millions of people across the world. Hospitals, the frontliners of this pandemic, have been continuously operating to provide service for the people despite increasing infection among patients and health workers. In a study conducted by Prakash, Dhar, and Mushtaq (2020) entitled *COVID-19 in the Operating Room: A Review of Evolving Safety Protocols*, thousands of healthcare workers have been infected with COVID-19 despite their adherence to infection control measures in the emergency room and surgical safety measures in the operating theatre.

The current COVID-19 pandemic underlines the importance of careful and sensible utilization of financial and human resources. Preserving manpower is vital. A definite attempt should be made to minimize infection amongst surgeons and specialized professionals. While it is true that surgical specialists are not at the forefront of managing the pandemic, the likelihood of getting infected in the confines of the operation theatres is disproportionately high. The surgical team needs to be updated as to the latest protocols being used to ensure increased safety within the operation theatres to prevent the spread of the coronavirus outside the theatre and disease amongst the theatre personnel.

In a separate study conducted in a tertiary hospital in Taiwan last 2021, precaution strategies were formulated to mitigate COVID-19 inside the operating room. Since patients cannot be deprived of immediate care related to surgical procedures, emergent surgical interventions for these patients were reviewed using current COVID-19 literature to establish an algorithm of precautions to be taken by operating room team members during the COVID-19 pandemic. Researchers believe that applying a transparent and integrated algorithm for operating room team members aids in effective personal protective equipment facilitation to keep healthcare providers and patients safe and prevent operating room and hospital-based transmission of COVID-19 (Hung et al., 2021).

The operating room needs to be designed to have the proper placement, as well as the fitting room and equipment design, to create a service flow that protects hospital staff and families/communities who come for patients. Appropriate facility standards must be prepared by hospital management so that patient care can be carried out correctly (Wisni, 2021).



## Local Studies

The Philippines, the country was no exception to the challenges brought by COVID-19. The national government created an Inter-Agency Task Force focusing on emerging infectious diseases. This agency outlined different quarantine measures that would ideally lessen the transmission of the virus in the country.

Despite the quarantine and COVID-19 safety measures imposed in hospitals, healthcare workers are still greatly affected by the virus.

The Philippine Society for Microbiology and Infectious Diseases and the Philippine Hospital Infection Control Society created a study last 2020 assessing the risks of surgeries during COVID-19. They say surgeries have been affected as hospitals prioritize addressing the pandemic. Surgery and other interventional procedures are inevitable even during the pandemic; hence, an organized and well-planned approach is needed to protect healthcare workers, especially those performing surgery. A well-planned approach is also essential to maximize the limited PPE resources in the hospital.

The primary mode of transmission of COVID-19 is via respiratory droplets, and engaging in surgery would expose people in the room to the said virus. The necessary personal protective equipment should provide maximum protection to all healthcare workers. Also, COVID-19 Risk assessment for patients should be used, lessening the transmission of the virus inside the operating room (Philippine Society for Microbiology and Infectious Diseases & Philippine Hospital Infection Control Society, 2021).

Necessary Personal Protective Equipment (PPE) in the Operating Room during the COVID-19 Pandemic:

1. Surgical masks
2. N95 masks
3. Sterile, water-impermeable surgical gowns
4. Sterile surgical gloves
5. Goggles or face shields
6. Head caps
7. Shoe covers (optional)
8. Alcohol or alcohol-based hand hygiene solution

## COVID-19 Risk Assessment for Patients About to Undergo Surgery (algorithm-fig1)

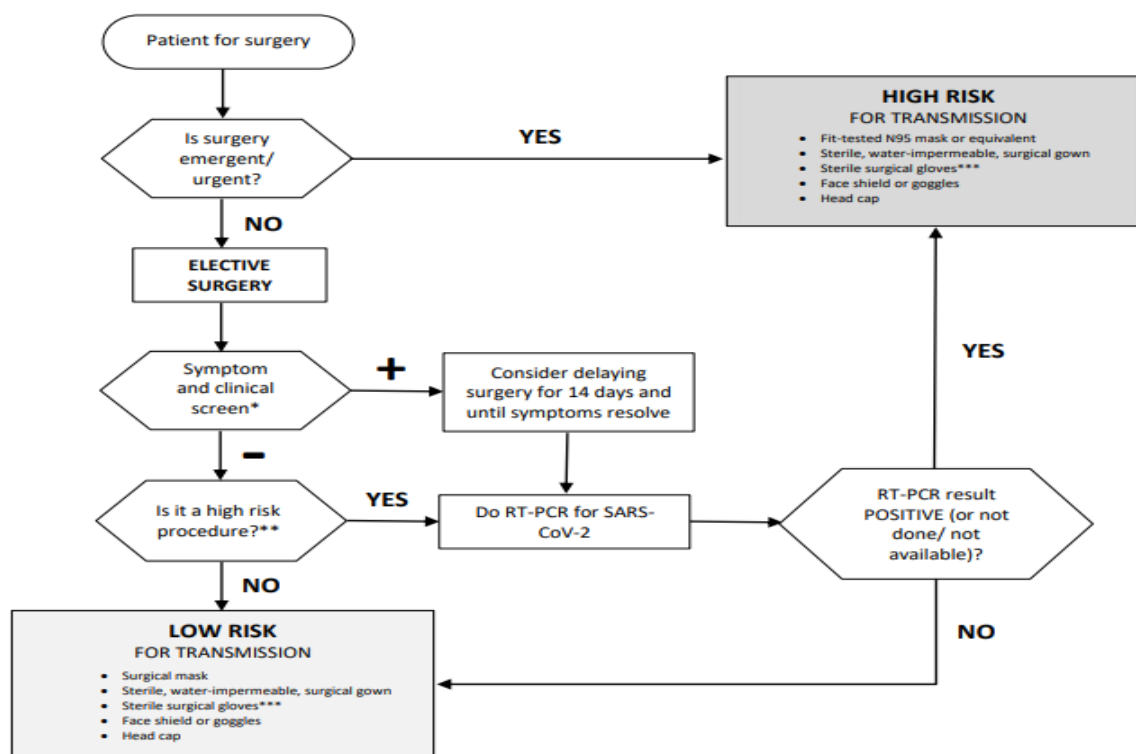
- Patients should be screened based on their symptoms, exposure [close contact with confirmed or probable cases], and travel history [to areas with increased cases or increased transmission level].

The presence of any symptom should warrant referral to the emergency room or designated COVID-19 triage/testing unit for evaluation and/or testing. Any history of COVID-19 infection or close contact should be referred to an infectious disease specialist or designated COVID-19 triage/testing unit for evaluation if any additional tests should be done.

- Consider doing a chest x-ray to aid in assessing patients (e.g., symptomatic patients, patients with prior lung conditions, etc.). Note that a chest x-ray is part of the recommended diagnostic tests for patients who will require pre-operative clearance (e.g., elderly, presence of comorbidities, etc.).

- For asymptomatic patients undergoing high-risk procedures, RT-PCR to detect SARS-CoV-2 using nasopharyngeal/oropharyngeal swabs can be done if available. Consider the accessibility, turnaround time, and cost-effectiveness for the patient (cost of RT-PCR vs. cost of PPE) when RT-PCR is to be requested.

**Figure 1. Algorithm for risk stratification of surgical procedure based on urgency of procedure, clinical assessment and RT-PCR results**



\* For symptomatic patients and the RT-PCR for SARS-CoV-2 is negative, consider working-up for appropriate diagnosis and management of the symptoms.

\*\* Aerosol-generating procedures include, but not limited to, the following:

Tracheal intubation, non-invasive ventilation, tracheotomy (tracheostomy), cardiopulmonary resuscitation, manual ventilation before intubation, and bronchoscopy (unless carried out through a closed-circuit ventilation system), open suctioning, sputum induction, non-invasive ventilation including high flow nasal oxygen, gastrointestinal endoscopy, evacuation of pneumoperitoneum during laparoscopic procedures, surgical procedures in which high-speed devices are used (include energy devices)- high speed cutters and drills, powered instrumentation, suction microdebrider, dental procedures – high speed drilling, high frequency oscillatory ventilation (HFOV)

\*\*\* Use double gloves if double gloving is part of institutional policy when performing surgery

Note: Anesthesiologists should wear fit-tested N95 mask (or equivalent) and face shield or goggles in anticipation of any unplanned or future exposures such as intubation or bag mask ventilation.

## Chapter III

### METHODOLOGY

#### Research Design

A quanti-quali research design was employed in this study. A quanti-quali research design combines at least one quantitative and qualitative research characteristic to obtain an in-depth understanding and corroboration of the topic. A quanti-quali research design aims to expand and strengthen the conclusions obtained in the study to answer one's research questions (Johnson et al., 2017).

#### Locale of the Study

This study was conducted in the country's largest department of Health tertiary hospital, located in Bajada, Davao City, Davao del Sur. The hospital has a 1,259-bed capacity, 35 ICU beds for critically ill patients with COVID-19, 205 beds for patients with mild or moderate COVID-19 symptoms, and 1019 beds for patients with diagnoses other than being positive for COVID-19, and 126 healthcare workers assigned solely in the operating room.

#### Respondents of the Study

The respondents were the Anesthesiologists, Operating Room Nurses, and Non-Nursing attendants whose duty assignment was in the operating room from 2021 to 2022. These respondents had constant exposure to patients in the operating room. There are 26 anesthesia residents, 65 assigned nurses, 35 assigned non-nursing attendants, and a total of 126 operating room-assigned healthcare workers. Since respondents are

healthcare workers from a designated government hospital, respondents under quarantine and isolation were not included at the time of the data collection.

### Sample Size and Sampling Technique

The researcher utilized complete enumeration to attain the most out of the study.

### Research Instrument

The research instrument used was the adopted World Health Organization's *Risk Assessment and Management of Exposure of Healthcare Workers in the context of COVID-19*. The survey questionnaire was composed of three parts. The first part initially includes personal questions to generate the respondents' demographic profiles, such as age, sex, years in service, position/designation, and exposure to the COVID-19 virus. The second part was the questionnaire proper composed of a 35-item Likert-type checklist assessing the hospitals' operating room exposure to COVID-19, PPE resources, availability of the operating room's safety, disinfecting, and infrastructure changes assessment on working conditions. The Likert-type questionnaire checklist was answerable with the following scale and description: 1-Never, 2-Rarely, 3- Sometimes, 4-Often, and 5-Always. The intensity of the response was five as the highest and one as the lowest. The results were interpreted using the following scales and descriptions

Scale	Description
4.21 – 5.00	Excellent
3.41 – 4.20	Very Good
2.61 – 3.40	Good
1.81 – 2.60	Fair
1.00 – 1.80	Poor

Since the questionnaire-checklist was adopted from WHO and already standardized, reliability and validity testing were unnecessary.

The third part of the questionnaire was composed of qualitative questions to extract data based on the respondents' thoughts and suggestions on the enhanced policies and protocols implemented by the government for COVID-19 mitigation.

## Data Gathering Procedure

After acquiring all the needed approval from the graduate school, the researcher sought consent from the hospital's Chief Medical Professional Services to have operating room healthcare workers participate in the survey and administer the questionnaires. An informed consent form consisting of ethical considerations, anonymity, confidentiality, the purpose of conducting the study, and safekeeping of the answered questionnaires was attached to the questionnaire for the respondents' perusal.

For respondents who opted for an online questionnaire, forms were automatically recorded using the Google form, and a link was provided. They were also given the lay way to withdraw or opt not to participate in the survey. The researcher allotted five days for the respondents to answer the survey questionnaire before its retrieval. The questionnaire was then retrieved, and the data gathered were tabulated, analyzed, and interpreted.

In the advent of COVID-19, the study was conducted following the health protocols set by the COVID-19 Inter-Agency Task Force and the Department of Health.

## Ethical Considerations

**Informed Consent.** Written consent was given to the respondents before conducting the survey. The researcher informed them of the purpose of the study and the reason behind why they were chosen. The researcher informed them of their privacy and their right to decline and withdraw from the study anytime they decide to. Codes were utilized to assure their anonymity.

**Risks, Benefits, and Safety.** Potential risks in this study would include awareness of possible mental and emotional trauma, especially if the respondent had a history of being infected with COVID-19. The respondents may also deem some questions uncomfortable, involving assessing their workplace. The benefits of the study may include awareness regarding the policies, procedures, and management of the hospital on COVID-19 and their capability to handle patients with COVID-19. This study can also improve the hospital's operating room management and its policies for the safety of its healthcare workers.

**Transparency.** Before the data collection commenced, the hospital's Chief of Medical Professional Services was oriented on the purpose of the research and how it could benefit the respondents and the hospital. The researcher also assured the respondents of the secrecy of the information, questionnaires, and data that were



kept by the researcher for filing and will be destroyed after one year from the date of the final approval of the study.

## Data Analysis Procedure

The numerical data gathered from the instruments were subjected to the following statistical tools:

**Frequency counts and percentages** were used to determine the profile of the respondents.

**Mean** was used to determine the hospitals' operating room assessment level.

**Standard Deviation** was used to determine the homogeneity and heterogeneity of hospitals' operating room assessments.

**Mann-Whitney U test** was employed to determine the significant differences in the hospitals' operating room assessment when respondents were grouped as to sex.

**The Kruskal-Wallis test** was employed to determine the significant differences in the hospitals' operating room assessment when respondents were grouped as age, years in service, and position/designation.

The significance level is set at a .05 alpha level.



**DATA PRESENTATION, ANALYSIS, AND INTERPRETATION*****Descriptive Analysis***

From a sample size of one hundred twenty-one, 36 or 29.80% were from the age range of 20-30 years old, 80 or 66.10% were from the age range of 31-40 years old, 4 or 3.30% were from 41-50 years old and one or 0.80% is from the age range 51 years old and above. When grouped as to sex, 68 or 56.2% were male, and 53 or 43.8% were female.

As to the number of years in service, 19 or 15.70% worked below two years, 40 or 33.10% worked within the range of 2-4 years, 33 or 27.30% worked within the range of 5-7 years, and 29 or 24.00% worked for eight years and above. Regarding position/designation, 26 or 21.5% are Anesthesia Residents, 64 or 52.90% are Nursing Staff, and 31 or 25.60% are Non-Nursing Staff.

The results coincide with the Philippine Statistics Authority on their Employment Situation Survey 2018, where males comprise most of the workforce aged 35-44 (Philippine Statistics Authority, 2019). The results also confirm the minimum number of years medical health workers need for operating room deployment. The operating room is considered to be a highly stressful environment. Staff in the operating room must be able to work efficiently and quickly with each other, and these skills can take some time to experience and master (City College, 2022).

*Table 1: Respondents' Sociodemographic Profiles*

Category	f	%
Entire Group	121	100.00
Age		
30 YO & below	36	29.80
31 YO & above	85	70.20
Sex		
Male	68	56.20
Female	53	43.80
Number of Years in Service		
Below 2 years	19	15.70
2-4 YRS	40	33.10
5-7 YRS	33	27.30
8 YRS & ABOVE	29	24.00
Position/Designation		
Anesthesia Residents	26	21.50
Nursing Staff	64	52.90
Non-Nursing Staff	31	25.60

***Operating Room Management as a whole, and when classified according to age, sex, years in service, and position/designation.***

Data analysis showed that the operating room management as a whole was “*excellent*” [ $M = 4.31$ ,  $SD = .413$ ].

Results further implied that the hospital complied with the standards the Department of Health set in assessing working conditions, availability of the operating room's safety, disinfecting and infrastructure changes, and PPE Resources.

Table 2: Operating Room Management as a Whole

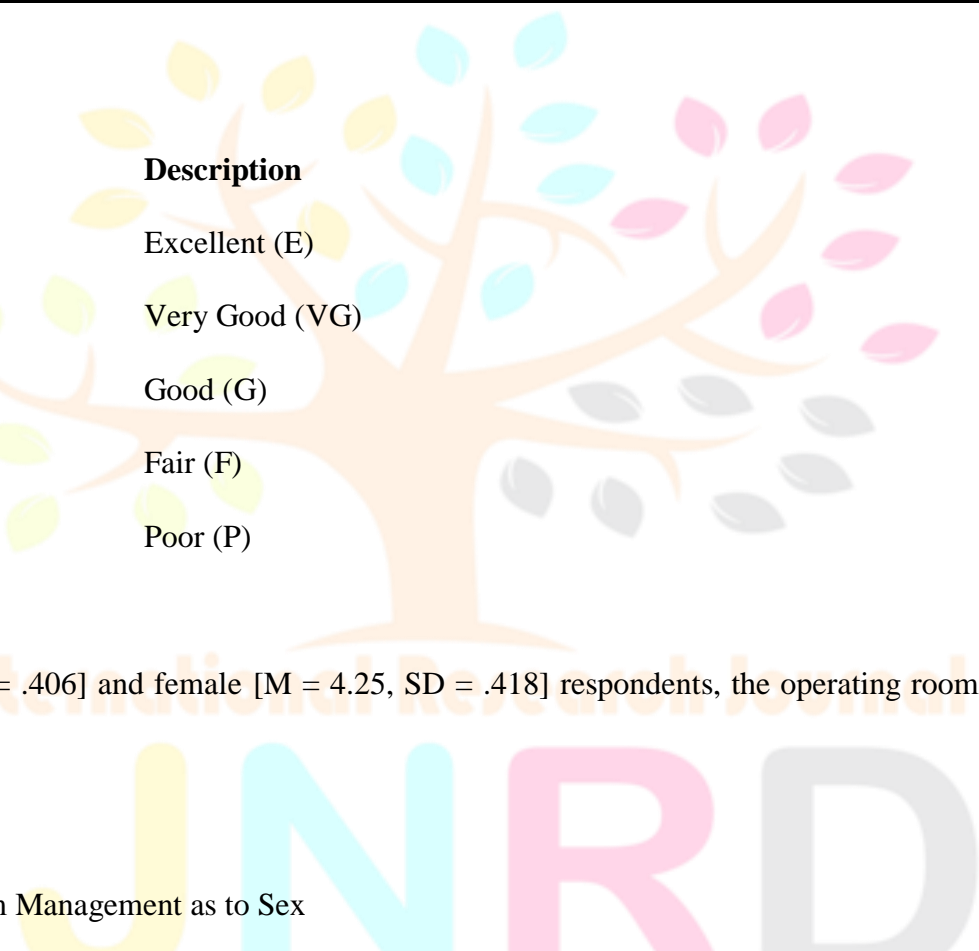
Parameters	Mean	SD	Description
A. On COVID-19 Exposure	3.81	.727	Very Good
B. PPE Resources	4.51	.449	Excellent
C. Availability of the operating room's safety, disinfecting, and infrastructure changes.	4.34	.582	Excellent
D. Assessment of Working Conditions	4.36	.569	Excellent
<b>GM=</b>	<b>4.31</b>	<b>.413</b>	<b>Excellent</b>

Scale	Description
4.21 – 5.00	Excellent (E)
3.41 – 4.20	Very Good (VG)
2.61 – 3.40	Good (G)
1.81 – 2.60	Fair (F)
1.00 – 1.80	Poor (P)

For respondents aged thirty years old and below [ $M = 4.31$ ,  $SD = .457$ ] and thirty-one years and above [ $M = 4.25$ ,  $SD = .397$ ] the operating room management were “*excellent*.” The result further implied that the hospital management protects and prioritizes the safety of the operating room and their assigned employees, especially those with comorbidities. Results are shown in Table 2.1.

Table 2.1 Operating Room Management as to Age

Parameters	30 years old & below			31 years old & above		
	Mean	SD	Desc.	Mean	SD	Desc.
A. On COVID-19 Exposure	3.95	.652	VG	3.76	.753	VG
B. PPE Resources	4.47	.485	E	4.53	.434	E
C. Availability of the operating room's safety, disinfecting, and infrastructure changes.	4.35	.659	E	4.33	.550	E
D. Assessment of Working Conditions	4.29	.535	E	4.30	.583	E
<b>GM=</b>	<b>4.31</b>	<b>.457</b>	<b>E</b>	<b>4.25</b>	<b>.397</b>	<b>E</b>



Scale	Description
4.21 – 5.00	Excellent (E)
3.41 – 4.20	Very Good (VG)
2.61 – 3.40	Good (G)
1.81 – 2.60	Fair (F)
1.00 – 1.80	Poor (P)

For male [M = 4.35, SD = .406] and female [M = 4.25, SD = .418] respondents, the operating room management was “*excellent*”.

Table 2.2 Operating Room Management as to Sex

Parameters	Male			Female		
	Mean	SD	Desc.	Mean	SD	Desc.
E. On COVID-19 Exposure	3.85	.671	VG	3.77	.798	VG
F. PPE Resources	4.53	.463	E	4.48	.432	E
G. Availability of the operating room's safety, disinfecting, and infrastructure changes.	4.39	.544	E	4.27	.626	E
H. Assessment of Working Conditions	4.46	.526	E	4.23	.601	E
<b>GM=</b>	<b>4.35</b>	<b>.406</b>	<b>E</b>	<b>4.25</b>	<b>.418</b>	<b>E</b>

Scale	Description
4.21 – 5.00	Excellent (E)
3.41 – 4.20	Very Good (VG)
2.61 – 3.40	Good (G)
1.81 – 2.60	Fair (F)
1.00 – 1.80	Poor (P)

Results showed that when grouped as to the number of years in service, the operating room management for respondents working below two years [ $M = 4.14$ ,  $SD = .500$ ] and those working eight years and above was [ $M = 4.18$ ,  $SD = .473$ ] “*very good*.” While for respondents working two to four years [ $M = 4.39$ ,  $SD = .346$ ] and five to seven years [ $M = 4.41$ ,  $SD = .332$ ] the operating room management was “*excellent*”. Results are shown in Table 2.3.

Table 2.3 Operating Room Management as to Number of Years in Service

Category	Below 2 Years			2 -4 Years			5 -7 Years			8 YRS & ABOVE		
	Mean	SD	Desc.	Mean	SD	Desc.	Mean	SD	Desc.	Mean	SD	Desc.
A. On COVID-19 Exposure	3.80	.638	VG	3.87	.683	VG	3.99	.537	VG	3.55	.953	VG
B. PPE Resources	4.32	.523	E	4.60	.339	E	4.62	.343	E	4.38	.571	E
C. Availability of the operating room’s safety, disinfecting, and infrastructure changes.	4.18	.744	VG	4.43	.537	E	4.43	.465	E	4.21	.624	E
D. Assessment on Working Conditions	4.06	.467	VG	4.41	.534	E	4.41	.570	E	4.44	.638	E
GM =	4.14	.500	VG	4.39	.346	E	4.41	.332	E	4.18	.473	VG

Scale	Description
4.21 – 5.00	Excellent (E)
3.41 – 4.20	Very Good (VG)
2.61 – 3.40	Good (G)
1.81 – 2.60	Fair (F)
1.00 – 1.80	Poor (P)



Data analysis revealed that for Anesthesia residents [M = 4.24, SD = .473], nursing staffs [M = 4.28, SD = .440] and non-nursing staffs [M = 4.41, SD = .274], the operating room management was “*excellent.*”

*Table 2.4 Operating Room Management as to Position/ Designation*

Category	Anesthesia Residents			Nursing Staff			Non-Nursing Staff		
	Mean	SD	Desc.	Mean	SD	Desc.	Mean	SD	Desc.
A. On COVID-19 Exposure	3.99	.684	VG	3.78	.811	VG	3.74	.553	VG
B. PPE Resources	4.42	.501	E	4.48	.474	E	4.63	.310	E
C. Availability of the operating room's safety, disinfecting, and infrastructure changes.	4.25	.709	E	4.29	.589	E	4.52	.400	E
D. Assessment on Working Conditions	4.12	.528	VG	4.44	.607	E	4.41	.476	E
GM =	4.24	.473	E	4.28	.440	E	4.41	.274	E

Scale	Description
4.21 – 5.00	Excellent (E)
3.41 – 4.20	Very Good (VG)
2.61 – 3.40	Good (G)
1.81 – 2.60	Fair (F)
1.00 – 1.80	Poor (P)

### *Inferential Analyses*

#### **Differences in the Operating Room Management as to variables sex, age, the number of years in service and position/designation.**

Results showed no significant difference in the government hospitals' operating room management as to position/designation [ $X^2_2 = 1.951$ ,  $p = .377$ ]. The two-tailed probability of .377 was greater than the set significance level of .05 alpha. Results further implied that the government hospitals' operating room management does not differ regardless of the respondents' position/designation.

On the other hand, a significant difference was noted in the government hospitals' operating room management in terms of the number of years in service [ $X^2_3 = 8.814$ ,  $p = .032$ ]. The two-tailed probability of .032 was less than

the set significance level of .05 alpha, implying that the government hospitals' operating room management differs

in terms of the respondents' years in service.

*Table 3: Differences in the Government Hospitals' Operating Room Management as to Age, Number of Years in Service, and Position/Designation*

Sources of Variations	df	Mean Rank	X <sup>2</sup> <sub>value</sub>	Sig. (2-tailed)	Interpretation
Number of Years in Service					
BELOW 2 YRS		47.45			
2-4 YRS		67.31			
5-7 YRS	3	70.11	8.814	.032	Significant
8 YRS & ABOVE		50.81			
Position/Designation					
Anesthesia Residents		56.10			
Nursing Staff	2	59.48	1.951	.377	Not Significant
Non-Nursing Staff		68.24			

Results showed no significant differences in the government hospitals' operating room management as to sex [U=1480.00, p= .092] and age [U = 1457.50, p = .681]. The two-tailed probabilities of .092 and .681 were greater than the set significance level of .05 alpha. The results further implied that the government hospital operating room management does not differ regarding respondents' sex and age.

*Table 3a: Differences in the Government Hospitals' Operating Room Management as to Sex*

Compared Means	Mean Rank	U <sub>value</sub>	Sig. (2-tailed)	Interpretation
Sex				
Male	65.74			
		1480.00	.092	Not Significant
Female	54.92			
Age				
30 years old & below	63.01			
		1457.50	.681	Not Significant
31 years old & above	60.15			

## Qualitative Analyses

### Themes generated when providing services to COVID-19-positive patients inside the operating room.

#### 1. Undying Feelings of Fear and Uncertainty

In this question, five common codes emerged (Fear, anxiety, risk, safety, and honored).

Codes	Frequency
Fear	27
Anxiety	10
Risk	16
Safety	24
Honored	11

Among these codes, FEAR emerged with the highest frequency. Most respondents feared providing services to COVID-19-positive patients in the operating room.

*Handling covid-19 patients is worrisome, especially when the procedure requires airway manipulation. Because there is always this fear of “I cannot fully guarantee the PPE that I’m using has without break or openings that the virus may enter.”*

– Respondent 112

*It was a mixed feeling of fear and anxiety.*

– Respondent 27

#### 2. Safety is a great concern

Another code with the second highest frequency is SAFETY. Working in a safe environment is one of the things they think about when providing services to COVID-19-positive patients.

*The vital role of health workers is to provide care and relieve suffering... To that in OR setting, safety measures should be taken during surgical procedures.*

*Personnel safety is always a must before everything else.*

– Respondent 99

## **Themes generated on the hospital's changes to mitigate the spread of COVID-19 inside the operating room.**

### *1. Effective yet a road under construction*

For this question, most of the respondents answered that the changes implemented by the hospital were “effective” but would need improvement for it to be fully maximized.

*Timely, but there is still room for improvement.*

– Respondent 13

*I know the hospital has done many things to mitigate the disease's spread. Still, due to limited resources and finances, some things were supposed to be done but weren't, e.g., providing negative pressure on the whole OR complex. However, an air purifier was provided, but it only covers small spaces. Another is that it would be better that there's an intended OR for covid alone and non-covid alone...or enough barriers and separate pathways for covid and non-covid one.*

– Respondent 61

### *2. Deviating conformity to rules*

Respondents could relay their experiences of others deviating from imposed protocols due to a lack of stricter implementation of the changes inside the operating room.

*Effective if ALL O.R. staff are themselves, protocol followers.*

– Respondent 97

*It is not fully implemented as other areas are implementing their policy.*

– Respondent 49

*I suggest that the administration make a unified protocol so that there would be uniformity and strictly followed by everyone, and not every department has its own protocol and guidelines. Another is that they may have a firm decision also in allotting or designating places for covid and non-covid to serve more patients.*

– Respondent 62

***Suggestions or recommendations on the current policies inside the operating room to better mitigate future exposures to and from COVID-19.***

***1. The Necessity to Necessitate***

Most respondents recommended and suggested improvement methods emphasized that it is necessary.

*So far, the plan and protocols have been well carried out. Maybe my concern is more structural, wherein there should be a separate pathway (entrance/exit) exclusive only for COVID patients, but of course, it will cost a large amount of money. But despite that lacking, other measures like cleaning and disinfection of the pathway are always undertaken.*

– Respondent 40

*In-house studies should be conducted further so that the facility's application of protocols and mandates is more applicable and effective in reducing the number of covid transmissions and preventing health care workers from exhaustion and being infected with the virus.*

– Respondent 86

*Careful and step-by-step planning for covid patients is a must! From preoperatively to the post-op period. I recommend post-op follow-up of Rt-PCR results of personnel handling patients, regardless of whether vaccinated, unvaccinated, or with or without symptoms. This is for proper isolation and management of personnel and to prevent transmissions thru asymptomatic individuals.*

– Respondent 113

***2. Cooperation from ground zero***

Aside from the needed changes for the protocols to be efficiently implemented, respondents also suggested that the administration cooperates with people working in the operating room.

*It is best to always hear from people directly and frequently exposed to covid-19 patients in the OR, such as residents and nurses rotating in covid areas.*

– Respondent 111



*Suggestions from front liners such as nurses and doctors who work in the OR should be heard and headed.*

– Respondent 79

*For me, the current policies are sufficient. It is only up to us individuals whether we follow it or not. Suggest looking into OR concerns.*

– Respondent 32

### ***Policies under the tertiary hospital.***

#### **Cleanliness of the Operating Room**

1. Daily personal cleanliness is extremely important for operating room personnel.
2. Before performing the duties described in the following paragraphs for preparation of the operating room, the circulator should wash his hands thoroughly and don a surgical cap.
3. The surgical cap must cover the hair completely to prevent possible contamination of the sterile area by falling hair or dandruff.
4. He /She should then don a clean, cotton scrub suit before entering the semi-restricted areas of the surgical suite.
5. Before entering a restricted area, the OR specialist must don an appropriate level of PPE. The PPE must be of snug fit to avoid outside air entering and contaminating the insides of the OR specialist.
6. The PPE should be changed whenever it becomes damp, soiled, or contaminated after each procedure.

*For policies 5-6, respondents narrated that though these policies are ideal for mitigating the transmission of COVID-19, the availability of resources, especially high-level PPEs, is not abundant due to the scarcity of PPEs worldwide. This has affected their ability to follow this policy, making it too idealistic for the said situation.*

**Suggestion:** *Adjust policy to maximize the utilization of full PPE based on the current situation and availability of PPEs so HCW will not be torn between following the policy and scavenging for available PPE resources.*

7. Damp dust the operating room unless this has already been done by personnel on the previous shift.
8. Concurrent with dusting, checking equipment, arranging furniture, and restocking supplies.
9. After damp dusting with a cloth soaked in a disinfectant solution prescribed by local policy, wet vacuum the floor using a disinfectant prescribed by local policy.
10. Dry dusting and mopping are never done in the operating room because they raise dust-containing bacteria.
11. Damp dusting should be done before the first scheduled incision time of the day.
12. Establish and follow a definite order when damp dusting furniture. Start with the tallest equipment and work down since this method helps the setting of airborne microorganisms;
  - a. Damp dust the operating room overhead light first, then the operating table.
  - b. Work from the center of the room to the perimeter (outer limits) and from the tallest item to the lowest.
  - c. If you are called from the room, leave the damp dusting cloth on the item being dusted, this will serve as the starting point when resuming dusting duties.
13. As the damp dusting is accomplished, set up the equipment and check each item for proper functioning. This will save time and energy. This includes such things as:
  - a. Switch on the overhead light to ensure the proper functioning
  - b. Check the operating table for proper working order
  - c. Check the suction machine, the electrosurgical unit, and other pieces of equipment in the operating room whether or not they are to be used
  - d. Line the kick buckets with plastic bags
  - e. Check the supply cabinets for stock. Restock, if necessary
14. The monthly maintenance day of the operating room is every first Monday of the month. Total cleaning of any specific area including hallways, floors, sub-steriles, scrub/utility areas, and sterile storage areas. All areas and equipment in the surgical suite should be cleaned according to this established schedule.

15. Routine cleaning of the operating room and all OR suites after every surgical procedure and in every shift.

16. The hospital Infection Control unit takes culture samples periodically.

Operating Room Cleaning Schedules		
Areas requiring daily cleaning		Surgical lights and tracks
		Fixed-ceiling mounted equipment
		Furniture and mobile equipment, including wheels
		OR and hall floors
		Cabinet and push-plate handles
		Ventilation grills
		All horizontal surfaces
		Substerile areas
		Scrub and utility areas
		Scrub sinks
		Ventilation ducts and filters
Areas routinely cleaning	requiring scheduled	Recessed tracks
		Cabinets and shelves
		Walls and ceilings
		Sterilizers, warming, cabinets, refrigerators and ice machines

### ***Infection Control***

Infection control is an essential component of any healthcare delivery. Infection control measures can be as simple as hand washing and as sophisticated as high-level disinfection of surgical instruments. Implementing these measures can prevent the transmission of disease in healthcare settings and the community. The operating room functions to provide a controlled environment for the performance of surgical procedures. Surgical wound infections are the second most common nosocomial infection and may involve either the incision or adjacent structures. Most surgical wound infections result from microbial contamination (endogenous or exogenous source) of the wound during surgery. Operating room procedures are designed to provide the maximum reduction of exogenous microorganisms that could contaminate the surgical wound. Personnel and their compliance with surgically aseptic procedures are critical components in the prevention of surgical wound infections.

## Employee Health

Careful attention to employee health, safety, and personal hygiene will minimize the potential for acquiring or transmitting disease.

1. Personnel working in the OR shall be free from active infection. Vaccinations should be current to provide backup protection when there has been a failure in work practices. Those with signs and symptoms of infection must report to the supervisor/charge nurse who will refer them to the Personnel Health Services (PHS) for evaluation. Those with communicable infections shall be excluded from working in the OR until they have been cleared by the PHS.

*Based on the data gathered, some HCWs have been asymptomatic and failed to report their condition, thus, affecting the possibility of being excluded from work. Also, routine testing has been omitted, prioritizing symptomatic HCW due to the limited RTPCR resources.*

**Recommendation:** *For future pandemics, it would be better to have a routine swabbing regardless if symptomatic or asymptomatic to lessen transmission. Also, have all vaccinations with the booster. As for the RTPCR resources, it is an external factor that must be catered by all stakeholders.*

2. An employee who feels he/she has been exposed to a communicable disease or occupational exposure (i.e., needle stick or sharps injury) must report immediately to his/her supervisor who will send the employee to the Infection Control Unit.
3. Will become familiar with and adhere to policies outlined in the Infection Control Manual.
4. Will use protective barriers to reduce the risk of skin and mucous membrane exposure to potentially infectious materials.

*Based on the data gathered, some respondents have narrated that infrastructural changes such as protective barriers were lacking. Financial constraints were one of the reasons for this policy not being implemented to the fullest.*

**Recommendation:** *Improve infrastructural barriers to protect both HCW and patients. It would be better to invest on long term infrastructural protection which will not only be used for COVID-19 mitigation but for other highly infectious diseases.*

5. Will follow hospital policy on "Standard Precautions" for protection against bloodborne pathogens and demonstrate competence in the prevention of transmissible infections.

*Based on the data gathered, some respondents have narrated that there are some policies not implemented uniformly hence having multiple implementations from the ground zero.*

**Recommendation:** *Coordination, unified, and strict implementation of policies should be spearheaded by the administration to avoid confusion for the people following such policies.*

6. Will use contact, droplet, or airborne precautions as appropriate when providing care for patients who are known or suspected to be infected or colonized with microorganisms.

7. Will promptly report any suspected communicable diseases, occupational injury, or infectious exposures to the infection Control Unit for evaluation, treatment, and follow-up.

8. Will adhere to good hygiene practices. Hair, body, and nails should be clean at all times.

9. Neither nail polish nor artificial nails shall be worn. Fingernails should be kept short and clean and should not extend beyond the fingertips.

10. Will practice frequent and thorough hand washing with appropriate soap before and after each patient contact.

11. Will utilize work practices designed to minimize the risk of exposure to pathogens.

12. Work practice controls include the prohibition of eating, drinking, smoking, applying cosmetics or lip balm, and handling contact lenses in work areas where there is a reasonable likelihood of occupational exposure to bloodborne pathogens. Activities involving hand-to-nose, hand-to-mouth, or hand-to-eye action can contribute to indirect transmission.



13. Will report suspected trends or problems related to infection control to the Infection Prevention and Control Unit.

### ***Airborne Contamination and Ventilation Systems***

**Airborne Contamination:** One of the major goals of the surgical team is to reduce or minimize the counts of bacteria-carrying particles in the air.

**Ventilation Systems:** Should be designed so that airflow patterns will not allow air contaminants to enter clean areas. Air should flow from areas of positive pressure to areas of negative pressure. The quality of air entering the operating rooms should be carefully monitored.

1. Air should be filtered through two filters; the first filter should be rated as 30% efficient and the second at 90% efficient.
2. Operating Room ventilation is maintained at positive pressure concerning the corridors and adjacent areas because positive pressure prevents airflow from less clean areas into more clean areas. All air should be introduced from the ceiling and exhausted at the floor.
3. Operating Room doors should be kept closed except as needed for passage of equipment, personnel or the patient to reduce the microbial level in the air.
4. A minimum of 20% of the incoming air (three air changes per hour) should be from the outdoors.
5. Operating rooms should have a minimum of 15 air exchanges per hour with a recommended range of 20 to 25 exchanges.
6. Soiled decontamination and sterilizer loading/unloading should have a minimum of 10 air exchanges per hour.
7. Sterile storage, preparation, and packaging should have a minimum of 4 air exchanges per hour.
8. Free-standing fans, humidifiers, or dehumidifiers should not be used in the operating room or sterile processing due to disrupted airflow patterns resulting in contamination of the sterile field.

## Chapter V

### SUMMARY AND CONCLUSION

This chapter is represented in four sections. The first section contributes to an overall summary of the study, followed by a summary of the findings and their conclusions. Subsequent to this are the implications of the study and followed by recommendations for future research

#### SUMMARY

This study aimed to determine the government hospitals' operating room management during the COVID-19 pandemic for enhanced policies and mitigation protocols.

Specifically, the study aimed to determine the following:

1. The respondents' Sociodemographic profiles regarding age, sex, years in service, and position/designation.
2. The operating room management as a whole, and when respondents were classified according to age, sex, years in service, and position/designation.
3. The significant differences in the government hospitals' operating room management when respondents were classified according to age, sex, years in service, and position/designation.
4. The themes generated in providing services to COVID-19-positive patients inside the operating room.
5. The themes generated on the hospital's changes to mitigate the spread of COVID-19 inside the operating room.
6. The suggestions or recommendations on the current policies inside the operating room to better mitigate future exposures to and from COVID-19.
7. The COVID-19 mitigation policies/protocols can be crafted based on the study results.

The study employed the quanti-quali research design and was conducted using one hundred twenty-one respondents chosen through complete enumeration. The instrument used to gather data was an adopted Likert-type questionnaire checklist of the World Health Organization's *Risk Assessment and Management of Exposure of Healthcare Workers in the context of COVID-19*. The statistical treatments employed include the Mean, Standard Deviation, Mann-Whitney U test, and the Kruskal-Wallis test. The significance level for all inferential tests was set at .05 alpha using a two-tailed test.

The following findings were revealed in this study:

Most of the respondents were male, and as for the age, most of them was thirty-one years old and above and had worked in the operating room for two years and above.

Regarding position/designation, twenty-six were Anesthesia Residents, sixty-four were nursing staff, and thirty-one were the non-nursing staff.

The operating room management as a whole was evaluated as “*excellent*.” When grouped as to age, all respondents evaluated the operating room management as “*excellent*,” regardless of their ages.

Male and female respondents evaluated the operating room management as “*excellent*.” Regarding the number of years in service, the respondents working below two years and those working eight years and above evaluated the operating room management as “*very good*,” while those who were working two to four years and five to seven years evaluated “*excellent*.”

Meanwhile, when grouped as to position/designation, all the operating room-assigned employees evaluated the operating room management as “*excellent*.”

A significant difference was noted in the government hospitals' operating room management in terms of the number of years in service, and no significant differences were revealed in terms of sex, age, and position/designation.

On the qualitative side, fear emerged with the highest frequency among the five common codes. Most of the respondents felt fear when providing services to COVID-19-positive patients in the operating room and answered that the changes implemented by the hospital were “*effective*” but needed improvement.

Most of them also recommended and suggested improvement methods emphasizing its necessity.

Respondents also shared their thoughts on the changes implemented and have commonly said that it was effective

to mitigate the spread of COVID-19 inside the operating room but would still need improvements along the way for the virus and its characteristics to be ever-changing. As for the recommendations, the majority voiced out that though changes require time and money, structural changes specifically designed for highly transmissible viruses are a must to mitigate the spread of the virus better. This will lessen the transmission and exposure of the healthcare workers to the virus, leading to lesser exhaustion due to the lack of manpower. Also, some respondents suggested that in-house studies and step-by-step planning with the people on ground zero be made to create policies and protocols that precisely fit their hospital's COVID-19 situation, resources, workforce, and infrastructure.

## Conclusions

From the study's initial findings, the following conclusions were drawn:

The tertiary hospital has followed protocols and policies implemented by the World Health Organization as their backbone for COVID-19 mitigation inside the operating room. However, based on the narratives of interviewed respondents, specific policies created by the WHO are idealistic in their approach, hence the difficulty of applying such in the operating room COVID-19 mitigation routine of the said hospital.

Health care workers inside the operating room should voice out their thoughts and ideas to help craft policies and protocols involving them and their safety.

The tertiary hospital was able to craft policies and protocols based on theory and their applicability. The hospital has focused on the protection of its employees. Still, policies with appropriate resources, infrastructure, and careful planning with the people involved in the operating room would exhaust the efficiency of such policies.

## Implications

The findings of this study have different implications:

1. The government hospital in Davao City assigned to cater to COVID-19 patients could craft policies and protocols that helped manage the COVID-19 transmission of operating room assigned healthcare workers.

2. Using the Principles of Scientific Management Theory, the hospital prioritizes operating room safety and assigned healthcare workers to increase efficiency through their policies and protocols. It resulted in the hospital's ability to cater and provide services to more COVID-19-positive patients.
3. Though policies and protocols were efficient in targeting the widespread exposure of COVID-19, some policies were not entirely exhausted. Some examples are:
  - a. Proper screening of patients due to the immediate need of the patient to be catered.
  - b. Proper PPE requirements due to the limitations in hospital resources like high-level PPE.
  - c. Designated areas for movement/transport of COVID-19-positive patients due to lack of infrastructural changes that require financial support.

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# APPENDICES

## APPENDIX A Request for Dissertation Adviser



Republic of the Philippines  
ILOILO STATE COLLEGE OF FISHERIES  
SCHOOL OF GRADUATE STUDIES  
COLLEGE OF EDUCATION  
Barotac Nuevo, Iloilo



Registration No. 78Q13035

### REQUEST FOR SPECIAL PROBLEM/ THESIS ADVISER

January 26, 2022  
Date

The Dean  
College of Education  
Iloilo State Collage of Fisheries  
Barotac Nuevo, Iloilo


Sir:

The undersigned, a graduate student Master in Public Administration of Iloilo State College of Fisheries, Barotac Nuevo, Iloilo would like to request Michelle Dechavez, Ph.D. to act as Special Problem/ Thesis Adviser of my proposed research entitled: Government Hospitals Operating Room Management Assessment Amidst the Pandemic: Basis for Policy Making.

I believe that her expertise in the field of Social Statistics would significantly help me for the successful and early completion of my research work.

I am hoping for your approval on this matter.

Very truly yours,

  
ALINA FALLA S. ARANCEL  
Student's Signature

CONFORME:

MICHELLE DECHAVEZ, Ph.D.  
Thesis Adviser

APPROVED:

SANNY F. FERNANDEZ Ph. D.  
College Dean

## APPENDIX B

### Request for Dissertation Panel Members



Republic of the Philippines  
ILOILO STATE COLLEGE OF FISHERIES  
SCHOOL OF GRADUATE STUDIES  
COLLEGE OF EDUCATION  
Barotac Nuevo, Iloilo



Registration No. 78Q13035

#### SPECIAL PROBLEM/ THESIS PROBLEM ADVISORY COMMITTEE

Name: Alina Falla S. Arancel

Date: January 26, 2022

Course: Masters in Public Administration

Learning Center: ISCOF, Barotac Nuevo, Iloilo

Designation	Name	Conforme
Thesis/ Special Problem Adviser	<u>Michelle Dechavez, PhD.</u>	
Committee Members	1. Dr. Suzette Palla 2. Dr. Ricardo Paborada 3. Dr. Ildefonso Toledo 4. Dr. Johnny B. Dolor	

Thesis/ special Problem Title: Government Hospitals Operating Room Management Assessment Amidst the Pandemic: Basis for Policy Making.

NOTED:

**SANNY F. FERNANDEZ Ph. D.**  
College Dean

APPROVED:

**SUZETTE Q. PALLA DFishTech**  
Director, Graduate Studies

## APPENDIX C

### Request to Conduct the Study



ILOILO STATE COLLEGE OF FISHERIES  
COLLEGE OF MANAGEMENT  
Graduate Programs  
Barotac Nuevo, Iloilo



MARCH 4, 2022

**FITZGERALD C. ARANCEL, MD, FPCS, FPSGS, MDM**  
Chief Medical Professional Services Officer  
Tertiary Hospital  
Davao City

Good day!

I am Alina Falla Arancel, a student taking up Master in Public Administration at Iloilo State College of Fisheries, Barotac, Iloilo. I would like to ask your good office permission to allow me to conduct a survey among your healthcare workers assigned in the operating room. This is in view of my thesis entitled, *"OPERATING ROOM MANAGEMENT OF A TERTIARY HOSPITAL: BASIS FOR ENHANCED POLICIES & MITIGATION PROTOCOLS"*. Attached herewith is the survey questionnaire and a copy of the informed consent form for this study.

The survey will have two methods, online and paper-pen. The survey will last around 10-15 minutes and would be given at their most convenient time as not to disrupt their working hours. Participation in this survey is purely voluntary and there are no known or anticipated risks in the participation of this study. All information will be kept in utmost confidentiality and would only be used for research purposes. For privacy concerns, the name of the respondents nor the institution will not be included in the research writing,

If more information is needed from the researcher, please do not hesitate to contact me via mobile at 09190045436 or via email at [alinafalla86@yahoo.com](mailto:alinafalla86@yahoo.com).

Your approval to conduct this study will be of great help.

Hoping for your utmost consideration.

Sincerely,

**Alina Falla Arancel**  
Master of Public Administration

Noted by:

**Michelle D. Dechavez, PhD**  
Adviser

Approved by:

**Fitzgerald C. Arancel, MD, FPCS, FPSGS, MDM**  
Chief Medical Professional Services Officer

## APPENDIX D



## Letter to Thesis Advisory Committee

GS-07A-04/22-00



REPUBLIC OF THE PHILIPPINES  
ILOILO STATE COLLEGE OF FISHERIES  
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Website: [www.iscof.edu.ph](http://www.iscof.edu.ph)



### PRE/FINAL-ORAL DEFENSE

### THESIS ADVISORY COMMITTEE

Name: **ALINA FALLA S. ARANCEL**  
Course: **MPA**  
Schedule: **JULY 22, 2022**

Date: **JUNE 15, 2022**


Venue: **College of Management Department**

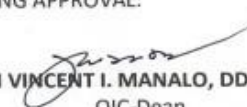
Designation	Name
Dissertation Adviser:	<b>DR. MICHELLE DECHAVEZ</b>
Committee Member:	
Panel 1:	<b>DR. ILDEFONSO TOLEDO</b>
Panel 2:	<b>DR. JOHNNY B. DOLOR</b>
External Expert:	<b>DR. MICHAEL B. DIZON</b>
Program Chair /	
Advisory Committee Chair:	<b>DR. EMELYN GRACE B. ESTILO, DPA</b>
OIC- Dean:	<b>DR. JOHN VINCENT I. MANALO, DDM ET</b>

Dissertation Title: **"Operating Room Management of a Tertiary Hospital: Basis for Enhanced Policies and Mitigation Protocols"**

NOTED:

RECOMMENDING APPROVAL:

  
**EMELYN GRACE B. ESTILO, DPA**  
Program Chair

  
**JOHN VINCENT I. MANALO, DDM-ET**  
OIC-Dean

APPROVED:

  
**JOAN M. BELGA, Ph.D.**  
VP Academic Affairs

**APPENDIX E****Questionnaire**

## GOVERNMENT HOSPITALS' OPERATING ROOM MANAGEMENT ASSESSMENT AMIDST THE PANDEMIC: BASIS FOR ENHANCED POLICIES AND MITIGATION PROTOCOLS

Thank you for choosing to be a part of this survey. This information you provide will assist the researcher in assessing the management of the hospital's operating room to protect the healthcare workers prevent and mitigate COVID-19 inside the operating room. Please be assured that this survey respects the anonymity of the respondents. Your responses will not require identifiers or personal information and shall not be presented in the results.

Code (by the researcher): \_\_\_\_\_

**I. RESPONDENT'S PROFILE**

Age: ( ) 20-30 y.o. ( ) 31-40 ( ) 41-50 y.o. ( ) 51 y.o & above

Sex: ( ) Male ( ) Female

Years in service: ( ) Below 2yrs ( ) 3-4yrs ( ) 5-7yrs ( ) 8 yrs or more

Position/designation: ( ) Anesthesia Resident ( ) Nursing staff ( ) Non-nursing staff

**II. QUESTIONNAIRE PROPER**

Directions: Please indicate your honest response by checking the corresponding number according to the following scale:

Legend:

5 – Always (A)

4 – Often (O)

3 – Sometimes (S)

2 – Rarely (R)

1 – Never (N)

	A (5)	O (4)	S (3)	R (2)	N (1)
<b>A. On COVID-19 Exposure</b>					
1. I have directly contacted a COVID-19 positive patient inside the operating room.					
2. I have provided direct care to a confirmed COVID-19 patient inside the operating room.					
3. I was present when any aerosol-generating procedures (AGP) was performed on the patient					
4. I wear personal protective equipment recommended by WHO during AGP on a COVID-19 patient.					
5. During a health care interaction with the COVID-19 patient, did you remove and replace your PPE according to the protocol (e.g., when medical mask became wet, disposed of the damp PPE in the waste bin, performed hand hygiene, etc.).					
6. I have direct contact with the environment where the confirmed COVID-19 patient was cared for? (E.g., bed, linen, medical equipment, bathroom, room, etc.)					
<b>B. PPE Resources</b>					
Personal Protective Equipment is available inside the operating room.					
	A (5)	O (4)	S (3)	R (2)	N (1)
7. Gloves					

8. Surgical Face Mask					
9. Disposable, Fluid Resistant Gown					
10. EyeShield/Goggles					
11. Respirator Mask (N95)					
12. Face Shield					
13. Cap					
14. Fluid Resistant Apron					
15. Shoe Cover/Or Intended Shoes					
16. Hazmat Suits					
17. Powered Air Purifying Respirators					
<b>C. Availability of the operating room's safety, disinfecting, and infrastructure changes.</b>					
18. Covid-19 Screening Facility/Procedure For Patients					
19. Covid-19 Screening Facility/Procedure For Healthcare Workers					
20. Handwash Area With Soap And Water					
21. Sanitiser/Disinfectant/Alcohol					
22. Medical Grade Cleaning Supplies					
23. Infrared Thermometers					
24. Negative Pressure					
25. Protective Physical Barriers (Acrylic/Plastic Coverings/Shields, Etc.)					
26. Training for donning and doffing of PPE					
27. Segregated area for donning and doffing of PPE					
28. Segregation of red, yellow and green zones within the operating room					
29. Usage of protective barriers in the transportation of Covid-19 positive Patients to and from the O.R.					
30. A separate pathway in the transportation of Covid-19 positive patient to and from the O.R. was provided.					
<b>D. Assessment on Working Conditions</b>					
31. I am prepared to care for patients with COVID-19.					
32. I am confident in caring for patients with COVID-19.					
33. I safe inside the operating room.					
34. The operating room is equipped to handle COVID-19 positive patients					
35. The facility has done enough in imposing safety measures inside the operating room					

36. What are your thoughts when providing services to COVID-19 positive patients inside the operating room?

37. What are your thoughts on the changes that has been implemented by the hospital to mitigate the spread of COVID-19 inside the operating room?

38. Do you have any suggestions or recommendations on the current changes or policies that can better mitigate future exposures to and from COVID-19?

**THANK YOU! STAY SAFE!**

## **APPENDIX F**

### **Letter to Respondents**

### **Informed Consent Form**

**Informed Consent Form for: *OPERATING ROOM MANAGEMENT OF A TERTIARY HOSPITAL: BASIS FOR ENHANCED POLICIES & MITIGATION PROTOCOLS***

**Name of the Researcher: *ALINA FALLA ARANCEL***

**Institution: *ILOILO STATE COLLEGE OF FISHERIES - MASTERS IN PUBLIC ADMINISTRATION***

### **INTRODUCTION**

You are invited to participate in a research study conducted by *ALINA FALLA ARANCEL* because you fit the inclusion criteria as a participant of the study.

If you wish to accept, your participation will be completely voluntary. Before fully deciding whether to participate or not, I would like you to read the information given below. If you have questions or do not understand something stipulated within this consent form, do not hesitate to ask me. Please take as much time as you need to read and understand the consent form. If you decide to participate, you will be asked to sign this consent form. Rest assured that the survey questionnaire does not contain your name or any identifiable information, with you being an informant.

### **PURPOSE OF THE STUDY**

The operating room, one of the busiest areas in the hospital, poses a higher risk of spreading the virus. With that, it is deemed necessary that hospitals develop safe medical practices, infection prevention protocols, and safety management to maximize all available resources without compromising the safety of the healthcare workers. This assessment could help devise and revise the hospital's approach in mitigating COVID-19 among its healthcare workers inside the operating room.

### **POTENTIAL RISKS AND DISCOMFORTS**

Potential risks in this study may include awareness of possibly mental or emotional trauma, especially if the respondent has a history of being infected with COVID-19. The respondents may also deem some of the questions uncomfortable, involving assessing their workplace.

### **POTENTIAL BENEFITS TO PARTICIPANTS AND SOCIETY**

The benefits of the study may include awareness regarding the policies, procedures and management of the hospital on COVID-19 and their capability to handle patients with COVID-19. This study can also improve the hospital's operating room management and their policies towards the safety of their healthcare workers.

**CONFIDENTIALITY**

The researcher will assure the respondents that their information will not be disseminated, questionnaires and data will be kept by the researcher for filing and will be destroyed after one year from the date of the final approval of the study. Codes will be utilized to ensure optimum privacy instead of names to assure your anonymity.

**PARTICIPATION AND WITHDRAWAL**

The respondents have the right to decline and withdraw in the study anytime they decide to without any penalty. If in the case where the respondent opts to stop answering the survey, they can do so. Also, if in any moment during the research process the respondent decides to withdraw his/her participation, then the survey form collected from him/her will be taken out from the files and discarded.

**INVESTIGATOR'S CONTACT INFORMATION**

Alina Falla S. Arancel  
09258845465  
alinafalla86@yahoo.com

**RESEARCH PARTICIPANT'S CONSENT**

I, the research respondent, have read the information provided above. I have been given a chance to ask questions about this consent form and this study. My questions, if any, have been answered to my satisfaction, and I agree to participate in this study. I am fully aware that I have the right to withdraw my consent at any time and discontinue my participation without penalty.

\_\_\_\_\_  
**Signature above Printed Name of Participant**

\_\_\_\_\_  
**Date Signed**

**RESEARCHER OBTAINING CONSENT**

I have explained the entirety of the research to the respondent and answered all of his/her questions. I believe that he/she understands the information described in this document and freely consents to participate.

\_\_\_\_\_  
**Alina Falla Arancel - Researcher**

\_\_\_\_\_  
**Date Signed**

**Noted:**

\_\_\_\_\_  
**Dr. Michelle D. Dechavez**  
Research Adviser

\_\_\_\_\_  
**Date Signed**

**APPENDIX G**  
**Photos**

**Preliminary Defense**

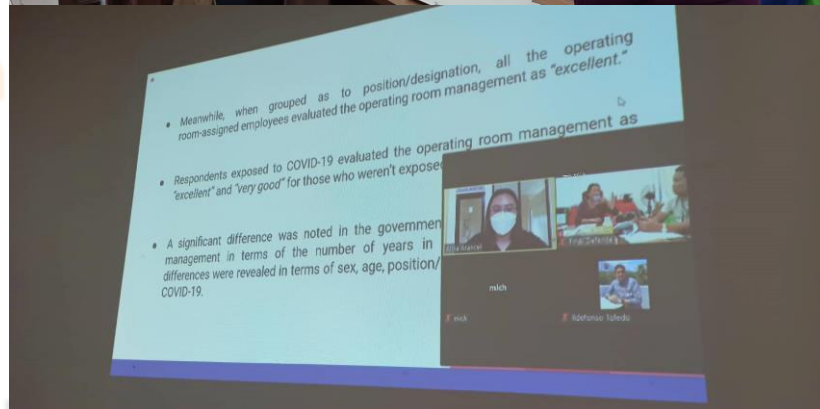






## APPENDIX H

### Photos Final Defense



## APPENDIX I

### Curriculum Vitae

**ALINA FALLA SALANIO ARANCEL**

#### **Personal Information**

**Address:** Mutual Homes Catitipan, Davao City, Philippines

**Sex:** Female

**Date of Birth:** July 11, 1994

**Place of Birth:** Davao City, Philippines

**Country of Citizenship:** Philippines

**Country of Residence:** Philippines

**Mobile Number:** 09190045436

**E-mail:** [alinafalla86@yahoo.com](mailto:alinafalla86@yahoo.com)



#### **Education:**

##### **Advanced Education:**

##### **Iloilo State College of Fisheries**

MA in Public Administration

2018-2022

Iloilo, Philippines

##### **Ateneo de Davao University**

MA in Applied Social Research

2015-2018 (Passed Comprehensive Exam)

Davao City, Philippines

##### **International Career Institute of Australia**

Diploma Course in Counseling and Basic Psychology

2019 (ongoing)

14/309 Kent St, Sydney NSW 2000, Australia

##### **Primary Education:**

##### **Ateneo de Davao University**

2001-2007

Acacia St., Matina, Davao City, Philippines

##### **Secondary Education: Ateneo de Davao University**

2007-2011

Acacia St., Matina, Davao City, Philippines

##### **Tertiary Education:**

##### **Ateneo de Davao University**

2011-2015

Roxas Ave, Davao City, Philippines

**Professional Development:****- Project SPARTA (Data Associate)**

June 2021-Present

Platform: Coursebank

Scholarship under DOST and DAP

Degree: Certificate Course

**- Data Management for Clinical Research**

May 18, 2021

Platform: Coursera

Vanderbilt University

Degree: Certificate Course

**- Understanding Research Methods**

July 24, 2020

Platform: Coursera

University: University of London

Degree: Certificate Course

**- Understanding Medical Research**

July 5, 2020

Platform: Coursera

University: YALE University

Degree: Certificate Course

**- Good Research Practice Training**

November 7-8, 2019

Holy Cross College of Davao

Organizer: PHREB and DOST

Degree: Certificate Training

**- Basic Barista Course**

September 2-6, 2019

Equilibrium Intertrade Corporation, Davao City

Organizer: Barista and Coffee Academy of Asia

Degree: Certificate Training

**Recent Research Activities/Workshops Joined:**

- 1st S&T Fellows Convention: Undertaking R&D Initiatives, Creating Ripples of Change. *May 30, 2022 - Crimson Hotel, Muntinlupa (DOST - S&T Fellows)*
- S4CP Summit - Mindanao Cluster: Science for Change is Science for Hope. *May 27, 2022 - Apo View Hotel, Davao (DOST - S4CP)*
- 3rd PHREB National Conference: Research Ethics during the Pandemic. *November 9, 2021 - Zoom (DOST PHREB Taguig)*
- AMDABiDSS - Research to Impacts: Bridging Gaps between Science and Public Policy Amidst COVID-19. *March 29, 2021 - Zoom (University of the Philippines Mindanao)*
- Workshop on Research Advising for Qualitative Research. *March 25-27, 2021 - Zoom (Asian Society of Teachers for Research)*
- SEAMEO Centres Policy Research Network. *March 10, 2021 - Zoom (SEAMEO - Thailand)*

- Action Research Writing Workshop.  
*February 25-26, 2021 - Zoom (Association of Scholarly Editors)*
- DOST-PCIEERD on Projects under Good Governance through Data Science and decision Support System.  
*February 8, 2021 - Zoom (DOST PCIEERD)*

**Research Interest:**

- Public/Social Health
- Social Welfare
- Women and Children

**Work Experience:**

- **University of Southern Mindanao**  
September 2021 - Present  
Instructor I  
Kabacan, Cotabato
- **Jose Maria College of Medicine**  
September 19, 2019 - May 31, 2021  
Research Facilitator  
Philippine-Japan Friendship Highway, Sasa, Davao City
- **Jose Maria College**  
September 19, 2019 - May 30, 2020  
Research Assistant  
Philippine-Japan Friendship Highway, Sasa, Davao City
- **Davao Medical Education Management**  
2018 (Administrative Assistant)  
DMSF Drive
- **Bureau of Immigration Davao**  
2014 (OJT)  
J.P. Laurel Ave, Davao City
- **Kids of Hope**  
2016 (Visiting Volunteer)  
SPMC Compound

