

# Analysis of Health Personnel Needs (Paramedic) in Handling COVID-19 based on Workload Using the WISN Method at Hospital Royal Prima Medan

Novita Helshinta<sup>1</sup>, Dewi Pangaribuan<sup>2</sup>, Chrismis Novalinda Ginting<sup>3</sup>,  
Sri Wahyuni Nasution<sup>4</sup>

<sup>1,2,3,4</sup>Master Study Program Public Health, Faculty of Medicine, Dental, and Public Health,  
University Prima Indonesia, North Sumatera, Medan

Corresponding Author: Novita Helshinta

DOI: <https://doi.org/10.52403/ijrr.20220259>

## ABSTRACT

Workload analysis is an effort to calculate the workload on the work unit by adding up all the workloads and then dividing by the individual work capacity per unit of time. This study aims to determine the need for health workers (paramedics) by calculating the difference between the ideal number of paramedics (nurses and pharmacists) and the reality (WISN difference) and calculating the workload at Royal Prima University Medan. This type of research is descriptive with quantitative methods, and qualitatively simultaneously to analyze the workload and obtain the number of paramedical staff, namely nursing and pharmacy staff based on the Workload Indicator Staffing Need (WISN) method.

**Keywords:** calculating workload, paramedics, nurses, University of Royal Prima Medan.

## BACKGROUND

According to the World Health Organization (WHO), on March 11, 2020, it was stated that the Corona Virus Disease-19 (COVID-19) outbreak as a global pandemic. During the Covid-19 pandemic, this is a threat to global health that can threaten the respiratory system most seriously for public health (Cucinotta and Vanelli, 2020). Health workers are the front line in the fight against Covid-19 and are exposed to dangers that can even threaten the lives of health workers. These hazards include exposure to

pathogens, long working hours, psychological stress, and work-related fatigue (Rodriguez et al., 2020). Health workers play an important role in fighting pandemics, especially in countries with less resilient health systems. Protection of health workers as the front line is very relevant to be carried out in health facilities that lack health workers (Ballard, Emily, and Nesbit, 2020).

The condition of the Covid-19 pandemic can be a concern for all people, one of which is the people in Indonesia about how to control and overcome Covid-19. The health sector is one of the areas that have the most impact on the Covid-19 pandemic. Problems in the health sector are becoming clearer with the spread of this disease, such as the unpreparedness of health facilities in dealing with this pandemic situation and can be observed from the suboptimal management of health human resources (HR) and the low performance of health services. This problem can have an impact on the higher level of risk of contracting and being exposed to medical personnel so that the death rate of medical personnel due to Covid-19, especially doctors and nurses, is higher. This is due to the lack of PPE.

The increasing number of Covid-19 and long working hours, as well as psychological pressure ('Guidelines on

Standards for Protecting Doctors in the Covid-19 Era', 2020). Health workers in various positions are reported to have a risk of anxiety, depression, difficulty sleeping during the Covid-19 pandemic and the causes are different. But for health workers, especially those on the front lines, this is due to a lack of time for rest and adequate sleep. This is most likely related to the very high workload and lack of personal training which can have an impact on mental health (Elizabeth et al., 2020).

According to Law No. 36 of 2014 concerning Health, the government is responsible for the planning, procurement, and utilization of health workers as needed. Article 13 states that the Government and Regional Governments are required to meet the needs of Health Workers, both in number, type, and competence equally to ensure the continuity of health development. Planning for manpower needs is carried out to be able to find out the needs of human resources in each unit (the Republic of Indonesia, 2014). In balancing the physical and mental aspects of humans in completing certain tasks, the number of workers who work must be considered so that the ideal number of workers and the existing workload will support mental and physical conditions at work (Wardanis, 2018). If the need for human resources is lacking, it can cause a high workload on health workers so that work satisfaction is reduced, burnouts and interest in changing jobs increase, the quality of patient safety decreases, causing the quality of service to patients to decrease (Alam, Raodhah and Surahmawati, 2018). By doing workload analysis, information will be obtained regarding the number of manpower requirements, work effectiveness and efficiency, and work performance a unit within the agency and can help determine the ideal number of workers (Wanri, Rahayu, and Trigono, 2018).

Based on research by Rani Kusuma Ningrum that the need for implementing nurses based on the WISN method to improve the quality of service in the IGD floor I RSUP DR Hasan Sadikin Bandung

obtained 104 workers with a WISN ratio of 0.6. This means that the current amount of power is smaller than the amount of energy needed to run the existing workload. It is necessary to add 46 people from the existing 58 people to achieve a balanced state. The WISN (Workload Indicators of Staffing Need) method is a better method for calculating how many health workers (of various types) are needed in a health facility based on the current workload (Ningrum, 2019).

According to the World Health Organization (WHO), the importance of evidence-based health workforce planning in health crises caused by natural disasters, Ebola, and the ongoing Covid-19 With supporting data and evidence, good planning carried out will be effective and efficient. In planning and distributing health workers evenly accompanied by skills in evidence-based facilities and data based on the burden of health workers according to community needs, the WISN (Workload Indicators of Staffing Need) method can be used (WHO, 2020).

Hospital Royal Prima Medan is located on Jl. Father No. 68A, Sei Putih Tengah, Kec. Medan Petisah, Medan City, North Sumatra. This hospital is also one of the private hospitals which is a referral center for the community, especially the people of Medan and surrounding North Sumatra. In addition, Hospital Royal Prima Medan is a hospital that treats Covid-19 patients. In this case, several paramedics are directly involved in the care of Covid-19 patients in the special inpatient room for Covid-19 patients, namely 123 nursing staff and 33 pharmacists ('Profile of Hospital Royal Prima Medan', 2020).

## **LITERATURE REVIEW**

### **2.1. Human Resource Management.**

Human resource management is the recognition of the importance of the organization's workforce as a very important human resource in contributing to organizational goals, and the use of several functions and activities to ensure that these

human resources are used effectively and fairly for the benefit of individuals, organizations and society. While the understanding in the policy is a means that can maximize the effectiveness of the organization to achieve goals.

There are 3 main objectives of human resource management are

1. Improve productivity level
2. Improving the quality of work life
3. Ensuring that the organization has complied with the legal aspects.

Productivity in question is a very important organizational goal. With human resource management, it can also increase the productivity of an organization, which is why if an organization that has achieved high productivity can be said to be good human resource management.

## **2.2. Institutional Interests.**

Human resource planning is very important for every agency (organization) in increasing the usability and results to achieve organizational goals. With human resource planning, quality, quantity, and proper placement of employees according to the needs of the agency. Human resource planning in an agency will also be able to assess whether the agency is advanced or not, as well as whether employee control can be carried out.

Human resource planning for the national interest is very important because the progress of a country lies in the superiority of its human resources. The higher the quality of human resources, the faster the country's progress will be. Therefore, the government must plan to improve the quality of human resources so that the country's development runs smoothly and quickly. Without good quality human resources, it is difficult for the country to achieve rapid progress. Enhancement HR quality can only be done with good and correct HR planning (Priyono and Marnis, 2016).

## **2.3. Definition of Workload**

Workload can be defined as the effort made by a person in realizing the request of a job or it can also be said as a person's capacity to do work within a certain time. The capacity in question is an ability that can be measured both physically and mentally. Decreased quality of life/fatigue and quality of work/error rate can occur as a result of heavy workloads. In addition, it can also affect the safety or health of workers (Irzal, 2016). Workload can also be interpreted as giving responsibility to the authorized party in completing the task during the specified time (Saleh, 2018). Workload is the number of types of work that must be completed by professional health workers in one year in one health service facility (Ministry of Health, 2004).

## **2.4. Definition of WISN (Workload Indicator of Staffing Need) Method**

Based on the Decree of the Minister of Health of the Republic of Indonesia No. 81/Menkes/SK/I/2004 concerning Guidelines for the Preparation of Health Human Resources Planning at the Provincial, Regency/City and Hospital Levels is a guideline used to prepare plans for the provision and needs of human resources in health service institutions. The guidelines use the WISN (Workload Indicators of Staffing Need) method, this method is an indicator that shows the number of personnel needs in health facilities based on workload, so that the location/relocation will be easier and more rational. This method is used to calculate the number of needs for each category of health workers needed at the provincial, district/city level health offices and hospitals (Ministry of Health, 2004).

## **2.5. Advantages of the WISN Method**

1. Easy to implement because it uses data collected or obtained from reports on routine activities of each service unit.
2. It is easy to perform calculation procedures, so health managers at all

levels can incorporate them into health planning.

3. The results of the calculations can be immediately known so that the results of these calculations can be immediately utilized by health managers at all levels in making policies or decisions.
4. This calculation method can be used for various types of personnel, including non-health workers.
5. The calculation results are realistic, thus providing convenience in preparing budget plans and other resource allocations (Cania, 2019).

## METHOD OF RESEARCH

This type of research is descriptive using quantitative-qualitative methods and the design of this research is cross-sectional. This study aims to analyze the need for health workers in handling Covid-19 based on workload.

Variables are characteristics of research subjects that change from one subject to another (Sudigdo Sastroasmoro, 2017). The variables in this study consisted of:

1. Working time available
2. Work unit
3. Standard workload
4. Allowance standard
5. Need for health workers

The population in this study were paramedics, namely nursing staff and pharmacy staff who served in the inpatient installation of Hospital Royal Prima Medan. The sample selection method in this study used a sample selection technique, namely purposive sampling. The sample in this study were nursing staff and pharmacy staff who served in the inpatient installation of Hospital Royal Prima Medan.

Data analysis that will be carried out in this study uses the WISN (Workload Indicators Staffing Need) method. After the data was obtained from recording the results of in-depth interviews from informants and filling out daily log forms by respondents on the implementation of main activities and descriptions of activities carried out by

paramedics on duty in inpatient installations. Then the data is entered into the formula for calculating the number of manpower needs based on the WISN (Workload Indicators Staffing Need) method.

## ANALYSIS AND RESULT

### 4.1. Overview of Royal Prima General Hospital Medan

Royal Prima General Hospital Medan is located on Jl. Father No. 68A, Sei Putih Tengah, Kec. Medan Petisah, Medan City, North Sumatra. On February 14, 2013, the Head of the North Sumatra Provincial Health Office issued a Temporary Operational Permit to Royal Prima Hospital Medan No. 440.442/1641/II/YEAR 2014. On February 16, 2014 RS. Royal Prima Medan was inaugurated with a Permanent Operational Permit from the North Sumatra Provincial Health Office. This hospital is also one of the private hospitals which is a referral center for the community, especially the people of Medan and surrounding North Sumatra. The vision of RSU Royal Prima Medan is to become a leading hospital in the field of health services, education and research and health development by prioritizing the interests of public health. Meanwhile, the missions of RSU Royal Prima Medan are:

1. Organizing quality and professional plenary health services based on evidence and scientific research.
2. Continuously improve the competence of human resources in accordance with the development of science and technology in medicine, dentistry and other health.
3. Improving the quality and quantity of health, education and research facilities/infrastructure in accordance with technological developments and community needs.
4. Carry out a comprehensive and integrated research and evidence-based education function in the health sector.
5. Creating a work environment that synergizes and upholds human and

religious values as well as improves the welfare of the parties concerned.

6. Establish partnerships with various parties in an effort to strengthen the role of hospitals in health services and education.
7. Carry out service to the interests of public health. ('Profile of RSU Royal Prima Medan', 2020)

## 4.2. Characteristics of Respondents

Table 1. Operational Definition

Variable	Operational Definition	Measuring instrument
Input	1. Setting the available working time is	Interview
	activities to calculate effective working time	deep, form
	in 1 year per each	daily log and study
	category of paramedic who served in	document

Tables 2. Characteristics of Respondents Based on Age, Gender, and Last Education

No	Characteristics	Number of people)	Percentage (%)
	Age		
1.	21-25 years old	36	43.38
2.	26-30 years old	38	45.79
3.	31-35 years old	3	3.61
4.	36-40 years old	3	3.61
5.	41-45 years old	3	3.61
	Amount	83	100
	Gender		
1.	Man	17	20.48
2.	Woman	66	79.52
	Amount	83	100
	Last education		
1.	D3 Nursing	31	37.35
2.	D4 Nursing	1	1.20
3.	S1 Nursing	7	8.43
4.	S1 Professional Nurse	11	13.26
5.	D3 Pharmacy	11	13.26
6.	D4 Pharmacy	2	2.41
7.	Bachelor of Pharmacy	13	15.66
8.	S1 Pharmacist Profession	7	8.43
	Amount	83	100

Based on the results of the study, there were 83 respondents and the characteristics of the respondents in the study were based on age, gender and last education. Characteristics of respondents based on the obtained age of the most in the age range of 26-30 years as many as 38 people (45.79%) and the least in the age range 31-35 years, 35-40 years and 41-45 years, as many as 3 people (3.61%). Characteristics of respondents based on gender obtained the most with female sex as

many as 66 people (79.52%) while male sex as many as 17 people (20.48%). And the characteristics of respondents based on their latest education, the most with the latest D3 Nursing education as many as 31 people (37.35%) and the least with the last D4 Nursing education as many as 1 person (1,20%).

## 4.3. Define HR Work Units and Categories

The work unit in calculating the need for paramedics is the Inpatient Installation unit at RSU Royal Prima Medan with the selection of sub units in the Covid-19 Patient Isolation Room at RSU Royal Prima Medan. The categories of human resources in this study are nursing staff and pharmacy staff.

Tables 3. Work Units, Sub-Work Units and HR Categories

Work unit	Sub-Unit of Work	HR Category
Inpatient Installation	Patient Isolation Room	Nursing staff
RSU Royal Prima	Covid-19 at RSU	and energy
Medan	Royal Prima	pharmacy.

## 4.4. Interview Results

### 4.4.1. A. Nursing Needs

The current need for nursing staff is still lacking because for nursing needs currently using the BOR method seen from the number of beds. And there are 3 patient criteria: total care (the need to be fully assisted by health workers) where 2 patients are handled by 2 nurses, self care where 1 nurse treats 5 patients, partial care where 1 nurse treats 3 patients. The informant suggested that the hospital fulfills the needs of health workers in the Covid-19 isolation room, but the number of patients sometimes always fluctuates so that at this time they are following the hospital's method to be able to work optimally.

### 4.4.2. Pharmaceutical Needs

So far, the need for pharmacy staff is still sufficient because it depends on the time of work and the number of patients that fluctuates. When the number of patients is large, the activities of the pharmaceutical staff become congested, so that the workload also increases. However, if the

number of patients decreases, the workload of pharmacists will be low. However, if the work time is less in completing the task, the workload will increase and vice versa.

#### **4.5. Working Hours Available for Paramedics at RSU Royal Prima Medan**

Paramedic available working time is the effective time available within one year by paramedics in carrying out their main duties at RSU Royal Prima Medan. The working time of paramedics every day is 8 hours.

Working time available Nursing staff at RSU Royal Prima Medan in 1 year is 2,288 hours/year or 137,280 minutes/year, while the available working time for pharmacists at RSU Royal Prima Medan in 1 year is 2,192 hours/year or 131,520 minutes/year. This is due to differences in annual leave for pharmacists and nursing staff.

The Royal Prima Medan General Hospital serves patients every day, but the Royal Prima Medan RSU provides 16 days of national holidays and 12 days of annual leave to paramedics and 3 days of absence from work. However, nursing services at RSU Royal Prima Medan are still running on National holidays and joint leave. However, there is a difference in annual leave between 0 days of nursing staff and 12 days of pharmacy staff.

Based on interviews with informants, to improve the competence and professionalism of each member of the paramedical staff, education and training were carried out for nursing and pharmaceutical staff at RSU Royal Prima Medan to attend training and practical seminars for 7 days in 1 year.

In Nur Hazmi Harahap's research in 2017, the working time available for nursing in the inpatient installation of the Rantauprapat Hospital in 1 year is more than the Royal Prima Medan Hospital, which is 2,080 hours/year or 124,800 minutes/year. The difference in results is due to the working days of nursing staff at the Rantauparapat Hospital in 1 year, which

is 300 days/year, education and training 3 days/year, national holidays 20 days/year, absence from work 5 days/year (Hazmi, 2017).

According to Kepmenkes No. 81/Menkes/SK/I/2004 the available working time for the nurse category is 214 days or 1712 hours/year or 102,720 minutes per year (Ministry of Health, 2004). By using the guidelines of this theory, the working time for labor Nursing at RSU Royal Prima exceeds the effective working time, because there are differences in the calculation of working days, number of days off, and absence from work.

In addition to calculating the available working time, based on interviews with informants related to the use of available working time that they need a longer working time to complete their work than the time provided. After the researchers dug up information from the informants, the researchers could conclude that this was influenced by skills and work experience, team cohesiveness, the number of patients and the severity of patients faced by paramedics at Royal Prima Hospital Medan.

#### **4.6. Standard workload of Paramedics at Hospital Royal Prima Medan**

The standard workload of paramedics is a calculation of the ratio between the average time required for each main activity with the available working time within one year. Based on the research conducted, it is known that the calculation of the standard workload of nursing staff at RSU Royal Prima Medan in carrying out their activities within a year gets an overall result of 623,792 times/year, where for direct productive activities is 440,775 times/year, for productive activities it is not direct, namely 76,805 times/year, and for non-productive activities 106,212 times/year.

Meanwhile, the pharmaceutical staff at Hospital Royal Prima Medan in carrying out their activities within one year got an overall result of 138,440 times/year, where for direct productive activities it was 66,209

times/year, for indirect productive activities 1,391 times/year, and for indirect productive activities, it was 1,391 times/year. non-productive 70,840 times/year.

In Mirza Aulia's research in 2017, the overall standard of workload was obtained in the Inpatient Room of RSUD dr. Adnaan WD Payakumbuh as many as 482,452 times/year, where for direct productive activities are 311,811 times/year, for indirect productive activities are 46,796 times/year, for midwifery activities 38,808 times/year and for non-productive activities 85,037 times/year (Sinaga, 2016).

In Nur Hazmi Harahap's research in 2017, the overall standard of workload in the inpatient installation of the Rantau Parapat Hospital was 440,826 times/year, where for direct productive activities was 288,484 times/year, for indirect productive activities was 60,476 times/year, for direct productive activities was 60,476 times/year. who are not productive 91,866 times/year (Hazmi, 2017).

In accordance with the Decree of the Minister of Health of the Republic of Indonesia Number 81/Menkes/SK/I/2004 concerning Guidelines for the Preparation of Health Human Resource Planning at the Provincial, Regency/City and Hospital Levels, it is stated that the average time is the time it takes to complete a main activity. each category of HR in each work unit. The time needed to complete activities vary greatly and is influenced by service standards, standard operating procedures (SOP), available medical facilities and infrastructure and human resource competencies (Ministry of Health, 2004).

Based on interviews that have been conducted with informants that the workload is strongly influenced by working time and the large number of patients because when the number of patients is large, the activities become congested, so that the workload also increases and vice versa. However, if the work time is less in completing the task, the workload will increase and vice versa. This is in line with the theory that indicators of workload are in

the form of working conditions, use of working time and targets to be achieved (Koesomowidjojo, 2017).

## **CONCLUSION**

Based on the results of research and discussion, the conclusions of this study are:

1. The working time available in paramedical health services in a year, nursing staff is 137,280 minutes/year while for pharmacy staff is 131,520 minutes/year. Which is the result of calculating working days, annual leave, education and training, national holidays, absenteeism from work and working time.
2. The standard workload at RSU Royal Prima Medan is the largest direct productive activity of nursing staff, which is 440.775 times/year, while the smallest workload is indirect productive activity of pharmacy staff, which is 1.391 times/year.
3. The standard of allowance for paramedics at RSU Royal Prima Medan includes attending meetings, compiling activity reports, compiling drug and equipment needs, compiling consumables needs, participating in training with an allowance index of 0.20 per year.
4. The need for paramedics at RSU Royal Prima Medan using the WISN method, it was found that the shortage of nursing staff was 4 people, while the pharmacy staff had an excess of 8 people. However, the 33 pharmacists are pharmacists who do not only treat Covid-19 patients. This is in line with the Bed Occupancy Rate (BOR) percentage in the Covid-19 isolation room at Royal Prima Hospital as much as 81%, which means around 81% of the beds are occupied from the number of bed capacities provided in the Covid-19 isolation room.

**Acknowledgement:** None

**Conflict of Interest:** None

**Source of Funding:** None

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How to cite this article: Novita Helshinta Dewi Pangaribuan, Chrismis Novalinda Ginting et.al. Analysis of health personnel needs (paramedic) in handling COVID-19 based on workload using the WISN method at Hospital Royal Prima Medan. *International Journal of Research and Review*. 2022; 9(2): 468-475. DOI: <https://doi.org/10.52403/ijrr.20220259>

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