

The Quality Assurance of Medical Record Service Unit in Kariadi Hospital Semarang During Covid-19 Outbreak

Faik Agiwahyunto^{1*}, Retno Astuti², Nur Azizha Ramadhany³,Alinea Dwi Elisanti⁴

^{1,2,3}Medical Record and Health Information Program Study, Health Faculty, Dian Nuswantoro University, Indonesia

⁴Clinical Nutrition Program Study, Jember Politechnic State, East Java, Indonesia

*Email:faik.agiwahyunto@dsn.dinus.ac.id

*Correspondence: Graha Mandiri Residence L-4, Patemon, Gununungpati, Semarang City, Central Java, 50228, Indonesia

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ABSTRACT

Policies regarding, the flow of the medical record service procedures are needed during the COVID-19 pandemic. This pandemic requires medical record unit to adapt quickly. Differences in established patients who were not confirmed by the 2019-nCoV virus. Evaluation of quality assurance medical record service procedures during the COVID-19 pandemic for established patients who are not confirmed by the 2019-nCoV that support person-centered health care is crucial for the officer's needs. This study aim was to know the quality assurance of the medical record service unit in Kariadi Hospital Semarang during COVID-19 outbreak. This research was conducted from 1 July to 15 August 2020. The research instrument used in-depth interviews sheet and direct with participants used COVID-19 health protocol. Interviews were transcribed verbatim and analyzed used Haase's adaptation of Colaizzi's phenomenological. The research was analyzed by data analysis used content analysis with software Nvivo 12 Plus. The results, Dr. Kariadi Hospital already has a Standard Operating Procedure (SOP) for the flow of medical record service procedures during the COVID-19 pandemic for new or old patients who are not confirmed by the 2019-nCoV virus. The conclusion that Dr. Kariadi Hospital used quality assurance of electronic medical record to processing medical record documents for patients who are not confirmed by the 2019-nCoV.

INTRODUCTION

On December 31, 2019, the China Health Authority alerted the World Health Organization (WHO) to several cases of pneumoniaof unknown aetiology in Wuhan City in Hubei Province in cen-tral China. The cases had been reported since December 8, 2019, and many patients worked at or lived around the local Huanan Seafood Wholesale Market although other early cases had no expo-sure to this market (1). On January 7, a novel coronavirus, originally abbreviated as 2019-nCoV by WHO, was identified from the throatswab sample of a patient (2). This pathogen was later renamed as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) by the Coronavirus Study Group (3) and the disease was named corona virus disease 2019 (COVID-19) by the WHO. As of January 30,7736 confirmed and 12,167 suspected cases had been reported inChina and 82 confirmed cases had been detected in 18 other coun-tries (4). In the same day,

WHO declared the SARS-CoV-2 outbreak as a Public Health Emergency of International Concern (PHEIC) (4). Among patients admitted to hospitals, the mortality rate ranged between 11% and 15% (5,6). COVID-19 is moderately infectious with a relatively high mortality rate, but the information available in public reports and published literature is rapidly increasing (7).

Objects that are possible as modes of transmission of SARS-CoV-2 such as plastics, metals, woods, glass, food and papers (8–19). Currently, human-to-human spread of SARS-CoV-2 is the main source of transmission, so the spread has become more aggressive. Transmission of SARS-CoV-2 from symptomatic patients occurs via droplets released when coughing or sneezing (20). In addition, it has been studied that SARS-CoV-2 can be viable to aerosols (generated through a nebulizer) for at least 3 hours (21). WHO estimates the reproductive number (R_0) of COVID-19 to be 1.4 to 2.5, however, other studies estimate the R_0 of 3.28 (22). The stability of SARS-CoV-2 in inanimate objects is not much different from SARS-CoV. SARSCoV-2 is more stable on plastic and stainless steel (> 72 hours) than copper (4 hours) and cardboard (24 hours) (21). Another study in Singapore found extensive environmental pollution in the rooms and toilets of COVID-19 patients with mild symptoms. Viruses can be detected on door handles, toilet seats, light switches, windows, cabinets, and ventilation fans, but not in air samples (23).

Similar to other highly pathogenic coronaviruses (24), SARS-CoV-2 has been associated with outbreaks of healthcare associated infections in nursing homes (25) and hospitals (26). While the mode of transmission of SARS-CoV-2 from person to person remains unknown, it is expected that the primary route of transmission is by respiratory droplets and possibly small aerosols (21,27). The Centers for Disease Control and Prevention (CDC) recommends that hospitalized persons be placed in a single person room with the door kept closed, and that an airborne infection isolation room (AIIR), also known as a negative pressure room, be used for such patients who may require an aerosol generating procedure in an effort to contain potentially infectious aerosols from patients known or suspected of an active infection due to SARS-CoV-2 (28). However, as was seen in Italy (29), the US (30) and in other countries (31), the first wave of the SARS-CoV-2 pandemic often quickly saturated the capacity of hospitals to provide an AIIR for all patients known to have or suspected of COVID-19 (15).

Beyond acute care hospitals, nursing facilities typically have little to no capacity to provide an AIIR for patients. Instead, nursing facilities tend to transfer patients suspected of an infectious disease transmitted by small particle aerosols to a hospital for care and isolation in an AIIR for the duration of the period the patient may be contagious. During the first wave of the SARS-CoV-2 pandemic, with both nursing facilities and hospitals often overwhelmed in regions that experienced the greatest prevalence of COVID, these hospital resources were not available (15). Neutral pressure rooms are not designed to contain potentially infectious aerosols, both because of these aerosols migrating outside of the room and since the conditioned air is recirculated rather than exhausted outside as is the case for air in an AIIR. To prevent droplet transmission of disease during these moments, plexiglass partitions were installed throughout the emergency department,

including entrances, hospital police posts, registration desks, triage areas, nursing stations, and provider work areas (16). Protecting staff from unnecessary exposure to COVID-19 is a priority. An early report from the Centers for Disease Control and Prevention reported that between February 12 and April 9, 2020, approximately 10% of US healthcare staff who acquired COVID-19 during the pandemic required hospitalization (32).

People who have the highest risk of contracting this disease are people who have close contact with Covid-19 patients, including those who treat Covid-19 patients. Standard. Standard recommendations to prevent the spread of infection are regular hand washing, coughing and sneezing, avoiding direct contact with livestock and wild animals and avoiding close contact with anyone showing symptoms of respiratory illness such as coughing and sneezing (33). In addition, implementing precautions and Infection Control (PPI) while in health facilities, especially the emergency department. One form of infection prevention and control efforts based on the Ministry of Health Number HK.01.07/ MENKES/247/2020 Regarding Guidelines for the Prevention and Control of Coronavirus Disease 2019 (COVID-19), every time a patient enters health services with symptoms of Covid-19, screening must be carried out by doing initial assessment. The assessment is in the form of collecting information in the form of the patient's physical condition, symptoms of Covid-19, social, psychological medical history of the patient, travel history as material for analyzing information and data to identify and plan the need for medical services performed when a new patient is first served by health services. The follow-up of this initial assessment is used to determine the type of ODP or PDP patient that is used as a follow-up plan for patients with Covid-19 symptoms. The results of the initial assessment of the patient must be documented by medical personnel in a form prepared in such a way as to meet the data and information needs of quality with existing emergency conditions. This documentation is important to carry out as one of the functions of medical records that are used as a source of data that will later be used by health services for various purposes. In addition, this is in line with Permenkes 269 concerning medical records that in disaster conditions a special form is required to be used for documentation (34).

The hospital must have a medical record unit to manage patient medical record documents (35). The sub-unit of hospital medical records is a filing that has an archiving function including managing medical record documents. The paper base medical record documents that are still required because there is a need for approval or manual signature of medical personnel/patients required by patients for referral letters, inpatient approval letters, general approval, approval and operation reports (for surgical cases), birth identification reports, preoperative assessment, death report, discharge summary, death certificate, give birth report, external referral, and supporting examination results (36). Inherent to the operational management of a pandemic in the era of modern medicine is leveraging the capabilities of the electronic health record (EHR), which can be useful for developing tools to support standard management of patients Technology-based tools can effectively support institutions during a pandemic by facilitating the immediate widespread distribution of information, tracking transmission in real time, creating virtual venues for meetings

and day-to-day operations, and, perhaps most importantly, offering telemedicine visits for patients (24,37,38). During the Ebola outbreak in 2014, attention was brought to the use of the EHR as a potential public health tool (39). Unfortunately, despite the recent Ebola epidemic, the infrastructure for outbreak management was not present in many US health systems and their EHR applications. The EHR is a useful tool to enable rapid deployment of standardized processes (40).

Additionally, indispensable during the pandemic, the personal protective equipment (PPE) used by hospital workers, composed of face masks, gloves, clothing, aprons, caps, covers, glasses/goggles, the vast majority of which are made of plastic. Exhausted air has to be filtered through high efficiency particulate air (HEPA) and medical personnel entering the room should wear PPE such as gloves, gown, disposable N95, and eye protection. Once the cases are recovered and discharged, the room should be decontaminated or disinfected and personnel entering the room need to wear PPE particularly facemask, gown, eye protection (7). Surgical gloves are made of natural rubber, which is also a type of polymer. The literature highlights the importance of using these PPEs (9,13). The role of PPE in avoiding SARS-CoV-2 transmission is suggested also by another nosocomial study carried out in Hong Kong (8). The COVID-19 is a fast expanding pandemic, which caught many countries off-guard. In many countries, the control of the infection is hindered by inadequate emergency settings, suboptimal logistics, and scarcity of personal PPE (19). Healthcare workers as part of the healthcare system that handles COVID-19 are prone to experiencing anxiety. Many factors can be a source of anxiety for them, including limited PPE, fear of being a carrier for the people closed to them, fear of contracting COVID-19, limitations of rapid and swab examination facilities, limited healthcare facilities in handling the number of existing cases, high morbidity which is accompanied by a rapid increase in the number of cases (41). There are gaps in knowledge on the mode, source, and mechanism of transmission of COVID-19 and the rate of mutation of the virus in the community. This information must be acquired to ensure containment of the pandemic through the use of PPE quality assurance or institutions of new normal physical and psychological behaviors, which with luck will eradicate the virus from the community.

RSUP Dr. Kariadi Semarang City has a total of 135 medical record employees divided into 3 reporting sections, 14 outpatient coding, 7 storage people, 1 RM logistics, 25 pigeon registration, 13 TPPRI TPPGD personnel, 14 Garuda admission and distribution, casemix hospitalization 13 people, PJRM 36 people, Kasuary 7 people, Murai storage 1 person, and registrar 1 person (DRM RSUP Dr., Kariadi, 2020). Based on a preliminary study in May 2020 in the person in charge of medical records (PJRM), the Emergency Department (UGD) Dr. Kariadi Semarang City that the use of PPE on medical personnel is an obligation to wear PPE. The rules for the use of PPE are contained in the Republic of Indonesia's Minister of Health and are passed down to the rules of the President Director (Dirut) Kariadi Hospital. For the use of PPE it is adjusted to field conditions. For use, the gown is still rarely used and is only dried in the sun after use. Masks are used by medical personnel only one mask in a day, while gloves are required to be used once. That of the 10 medical

personnel, all of them use PPE during the procedure, two of them use a handscoon when they are the operator of the procedure and use a gown or protective gown. PPE is provided by the hospital to medical record officers to be used continuously during the Covid-19 pandemic. So far there has been monitoring and evaluation of medical record officers' compliance with the use and use of PPE.

Thus, researchers will examine quality assurance (quality assurance) Medical Record Service Unit Dr. Kariadi Semarang in the Covid-19 pandemic era, with the research title "Quality Assurance (Quality Assurance) Medical Record Service Unit Dr. Kariadi Semarang in the Covid-19 Pandemic Era". The problems to be studied include how the patient's medical record travel flow in the covid era and whether the patient's Medical Record Document becomes a media culture for the nCoV virus and can be a medium for transmission between hospital staff? Real solutions developed? Can this be applied in other hospitals where it is still unclear with a flow like this? This is the most important part and becomes a project to be researched and researchers will develop to RSUD Type C or B, which so far are still the main problem due to high numbers transmission in the Medical Records Unit.

METHOD

Design

This study used qualitative methods have similar relevance, the data collected in the same phase of the research project. Nurses and medical records workers were recruited from COVID-19designated hospitals in RSUP Dr. Kariadi Semarang Regent use purposive and snowball sampling. They participated in semi-structured, in-depth interviews by direct interviews from July 1 to August 15, 2020. Interviews transcribed verbatim and analyzed use Haase's adaptation of Colaizzi's phenomenological.

Participants

The research subjects are 3 person the main informants (MI) and 2 person the triangulation informants (TI):

MI 1 = Medical Records Officer (Outpatient Registration)

MI 2 = Medical Records Officer (Emergency Room Registration)

MI 3 = Medical Records Officer (Person in Charge of Medical Records-PJRM Isolation Room)

TI 1 = Head of Medical Records Unit RSUP Dr. Kariadi

TI 2 = PPI Officer

Data collections

This study used source triangulation in testing the validity of the data to obtain more accurate and credible findings and interpretation of data by using sources other than the main data. Data collection techniques used are through in-depth interviews (depth interview). Sources of data in this study are primary data sources. The primary data source is in the form of interviews. The

method of collecting data by in-depth interviews with snowball techniques. The research instrument used list of interviews to explore information related to research objectives.

Data processing and analysis

Following the procedures of the selected qualitative methods design, each type of data was analyzed independently. Responses to open-ended questions were coded by independent researchers following the data processing and procedures of content analysis with software Nvivo 12 Plus, namely: 1) data collection, using in-depth interview techniques that recorded using camera and voice recorder, then the results will be recapitulating to the transcript of the interview results for each informant, 2) data reduction, be carried out by identify the part founded in data that has meaning when it is associated with the focus of research problems followed by coding each data so that it can be traced where the data is sourced (coding) and grouped into sections that have similarities and look for link between one category and another (categorization), 3) data verification and presentation of analysis, be carried out by reviewing the data obtained against the theory and results of previous research, which will then be presented in narrative in accordance with the phenomenon under study, 4) drawing conclusions in descriptive form, by comparing the research question with the results of the research. Research results, research objectives and theoretical concepts to draw conclusions on the research results.

Participants' perceptions were grouped into emerging categories organized. According to the domains of the guiding questions. Responses in each category were counted and were grouped by domain. Quotes selected to represent the participant's opinions and these were translating to English. Qualitative methods integration conducted at the finding interpretation and reporting phases. To interpret both sources of data jointly, researchers gathered to discuss qualitative results together.

RESULTS

Based on the results of interviews obtained the following results (IU is the main informant and IT are the triangulation informant):

Policy Regarding Medical Record Service Procedure Flow

At Dr. Kariadi Semarang already has policy regarding the flow of medical record service procedures that are standard running in inpatient, emergency, outpatient installations.

“There is already policy contained in the standard medical record section, because in the process of making these policies refer to Law No. 23/1992 on health, Law No. 44/2009 on hospitals, Permenkes No. 269 of 2008 concerning medical records. So, from there was derived in the form of policy adjusted to hospital accreditation both SNARS and JCI. In the MIRM Standards in SNARS, everything has been made, both for medical record service procedures in IRRAL, IRNAP, IGD. After that, URM will make SPO and standard service procedures in order to provide optimal service. (TI1).

Constraints in carrying out services according to the flow of procedures

“So far there have been no significant problems. Now there is indeed major transformation towards the digitalization of DRM. Although, now 100% are outpatient and inpatient care. The IGD is currently running for the transfer, but there are some things that cannot be

digitized because regulations from the Ministry of Communication and Information technology and from legal standpoint cannot make vital data that cannot be used digitally. So, there are some documents that are still manual.” (UI2)

Differences in the Flow of Medical Record Service Procedures During the COVID-19 Pandemic

“There are differences in the flow of the procedure. For this problem, there is difference, namely Medical Services intervening here. All covid-19 patient files are their responsibility. Now, for this pandemic era, we at PPI have already overcome it, because before 2020 we have fully prepared, even though covid-19 has not yet entered Indonesia. Then we actually want covid-19 or not, we are ready because before covid-19 came, we already had MERS, AI, SARS and many more. So we have set updated rules, namely SPO regarding the handling of emerging and re-emerging infectious diseases with the code of Director Decree No. HK.00.01/I.IV.I/17/2014 dated 17 November 2017 at the PPI Committee.” (TI2)

Difference between new and old patients who were not confirmed with the N-Cov virus

“When there is patient, where it is new patient, it will be difficult to detect it clearly. When the screening officer finds patient who is indeed seeking treatment through outpatient poly or Emergency Departement and there is sign even though it is 1 sign, for example fever or several signs such as high fever, chills, influenza, coughs, it will be immediately declared the suspect. Then the screening officer did not suggest meeting or contacting the TPPRJ or TPPGD but directly handling the special officers and Medical Services was fully responsible. So that friends of medical records will not be touched or exposed to COVID-19.” (TI2)

DRM COVID-19 isolation room, person in charge of DRM, handling and filling of DRM, and Collengting and submitting to the Health Ministry

“New and old patients must screen first. Then if there are new symptoms, rapid test and swab test are carried out. And it's free. So, to wait 1 week, we prepare an isolation room. If indeed the patient has comorbid, then medical isolation will be carried out in negative pressure isolation room (in the hospital) but if not, then isolate independently and with supervision from Medical Services. There is no DRM and it is certain that there is no transmission. Because those who fill the DRM and hold the DRM must take off and replace the PPE completely, and they cannot wear gloves or anything, and must wash their hands in running water and use handsrubs.” (TI1)

Treatment of Patients Who Have Just Arrived at the Hospital and Have Unconfirmed, Referral Patients Who Are Clearly Confirmed, and DRM For Confirmed Patients

“DRM in any room is indeed placed at the Nurse Station and that is the responsibility of the PJRM, now when all the medical teams who will write down the data there must be removed from PPE and put in special boxes or infectious items which will later become PPI and CSSD matters. To write or read or use DRM, clean, sterile conditions must first be used and new surgical mask is worn. No gloves. Then the patient's data with covid data will be immediately submitted to Medical Services, after the DRM is declared complete (the patient has returned from the hospital), then the data will be sent to the Ministry of Health and claimed to be managed by the Covid RMIK team itself.” (TI1)

DISCUSSION

Policy Regarding the Flow of Medical Record Service Procedures during the COVID-19 Pandemic

The use of telehealth improves the provision of health services. Therefore, telehealth should be an important tool in caring services while keeping patients and health providers safe during the covid-19 outbreak (42). Health protocol flow has already implemented using recommended standards (43). Based on interviews, the process of making SOPs to maintain the quality of service in medical records must be carried out together, because the Medical Records for Outpatient Registration, Emergency Registration, and PJRM Isolation Rooms know the conditions in the field. After that, URM will make SPO and standard service procedures in order to provide optimal service. Meanwhile, there is still nothing that needs to be changed. In the near future, this may change due to the RME-RJ (Outpatient Electronic Medical Records) system.

The workflow was essential to quickly identify, isolate to help containing the disease and prevent community spread (44). The flowchart design of the initial assessment electronic form system. During pandemic, to eliminate the spread of the virus with paper based services, it is necessary to develop electronic services. One of the efforts to achieve this by using electronic recording of the initial patient assessment.

Officer compliance with the implementation of Medical Record Service Procedure Flow

SOP compliance and policies in the form of isolation of patients at RSUP Dr. Kariadi Semarang 2nd revised SOP for handling cases of KLB. Thus the officers are obedient in implementing the Flow of Medical Record Service Procedures. Electronic health record tools for managepandemic screening such as reports regarding prior PUI, existing and pending tests, training completion, and screening/documentation compliance (37). The current pandemic has caused digitization to flourish in the health care sector. e-Health, which iscombined use of electronic information and communication technology in the health sector, has high potential for optimizations and savings in the majority of health care systems worldwide. e-Health solutions can be supported care and treatment by exchanging treatment-relevant data among health care providers or between patients and health care providers in compliance with data protection regulations and by providing documents that are specially tailored to the needs of tele-intensive care of covid-19 patients (45).

Constraints in carrying out services according to the flow of procedures

Constraints are factors or circumstances that limit, hinder, or prevent the achievement of goals. Constraints also mean the forces cancellation of implementation. From the results of interviews, there are no obstacles on the way to implementing this policy. So far there have been no significant problems. Now, there is indeed massive transformation towards the digitalization of DRM. Although, now 100% are outpatient and inpatient care. The IGD is currently running for the transfer, but there are some things that cannot be digitized because regulations from the Ministry of communication and Information Technology and from legal standpoint cannot make vital data that cannot be used digitally. So there are some documents that are still manual. For obstacles in the field, there is no flow problem at all. Currently, it is heading towards digitizing DRM in the emergency department. Generally applicable policy solution that officers are comfortable with all

policies. Policy has been good so far, and there are no cases of covid-19 for the medical records department. The problem is contracting from outside the hospital. Policy has been formulating to be universal, so it's not just the case of covid-19.

On the other hand, EHRs can provide an important resource to describe outcomes or interventions in real life, since strict eligibility criteria and design constraints do not always allow extrapolation of clinical trial findings to the population at large (46). The usual EHR enhancement project includes thorough clinical and technical scoping process, budgeting, and planning stage, project management oversight, careful design with testing in multiple electronic environments, ample communication to end users prior to go - live, and, finally, implementation with field support in active clinical settings. Due to obvious time constraints, we were unable to follow this standard workflow (37). Some practices even missed their multi disciplinary colleagues or team members because of emerging financial constraints.

Monitoring Hospital Policies against the Use of PPE for Medical Record Employees in the COVID-19 pandemic era

Monitoring be carried out on time because on-time data availability. It is required for data management/ users to resolve problems in timely manner. In addition, the timeliness of monitoring is also important to obtain accurate data in monitoring certain objects at the right time. Based on the results of the interview, there has been monitoring and evaluation of the hospital policy of using PPE for medical support employees, especially medical record employees in the covid-19 pandemic era. Monitoring is carried out by the head of the hospital at any time. Documenting everything related to health services must be recorded quickly, accurately, completely and accountably.

This is accomplished through home monitoring, virtual health assessments, medication review, education and support for patients and families and coordination between family doctors, specialist doctors and other health team members. It can shorten hospital stays or avoid them all together, which reduces the risk of SARS-CoV-2 transmission for these often-frail patients and their providers (47). An emergency response involves assessment of local capacity, prioritizing interventions, establishing strategy, identifying resources, collection and tracking of data and regular monitoring (48).

Management of such patients should focus on prevention of transmission to others and monitoring for clinical status with prompt hospitalization if needed. If large-scale community transmission occurs, mitigating social gatherings, temporary school closure, home isolation, close monitoring of symptomatic individual, provision of life supports (e.g. oxygen supply, mechanical ventilator), personal hand hygiene, and wearing personal protective equipment such as facemask should also be enforced (7). This were shown to be an effective approach for strengthening monitoring and evaluation capacity and ensuring data quality with in national health system (28).

CONCLUSION

Dr. Kariadi Semarang already has an Standard Operating Procedure (SOP) for the flow of medical record service procedures during the COVID-19 pandemic for new or old patients who are not confirmed by the 2019-nCoV virus. Officers were obedient to the implementation of the medical record service procedure flow. There were no obstacles in carrying out services according to the flow of procedures. Conclusion that Kariadi Hospital used quality assurance of electronic medical record to process medical record documents for patients who are not confirmed by the 2019-nCoV.

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