

The Evaluation of Patient Safety Incident Reporting at the Yogyakarta Gondomanan Health Center Using the Health Matrix Network

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Abstract

Background: Based on patient safety incident data, the Ministry of Health, it is known that incident cases that occurred in the Special Region of Yogyakarta Province were 13.8%. Based on Patient safety's policy in Indonesia namely PMK No. 11 of 2017 concerning patient safety states that every health service facility is required to have an information system that is used to improve patient safety, including the health center. **The purpose** of this study was to evaluate the use of the patient safety incident information system at the Gondomanan Health Center by using the Health Matrix Networks.

Method: This study uses a qualitative descriptive method with a case study design. Data collection used interview guidelines with 5 informants, namely the head of the health center, the patient safety team (1 doctor, 1 midwife, 1 nurse) and the dental polyclinic service coordinator (1 poly nurse). The sampling technique used purposive sampling.

Result: There are 6 Health Matrix Network (HMN) tools that are used to measure the evaluation of patient safety information systems, namely information system resources, information system indicators, data sources, data management, CIS information products, and dissemination and use of SIK information. In terms of resource attributes or variables (policies, human resources, facilities and infrastructure and finance), health indicators, data sources, information products and the use of IKP reporting information are in accordance with the patient safety incident reporting guideline policy, and PMK No. 11 of 2017. Meanwhile, the attributes of data management and information products in the patient safety reporting information system have not been implemented optimally.

Conclusion: The information system for reporting patient safety incidents at the Gondomanan Health Center requires improvement in procuring special SOPs for internal reporting of patient safety incidents which are part of the data management attributes

Keywords: Evaluation, Health Matrics Network, Incident, Patient Safety

Abstrak

Latar Belakang: Berdasarkan data Insiden Keselamatan pasien, Kementerian Kesehatan, diketahui kasus insiden yang terjadi di Provinsi Daerah Istimewa Yogyakarta adalah 13.8%. Berdasarkan PMK No. 11 Tahun 2017 Tentang Keselamatan Pasien disebutkan bahwa setiap fasilitas pelayanan kesehatan diwajibkan memiliki sistem informasi yang dipergunakan dalam perbaikan keselamatan pasien, tidak terkecuali Puskesmas. **Tujuan** penelitian ini adalah melakukan evaluasi penggunaan sistem informasi insiden keselamatan pasien di Puskesmas Gondomanan dengan menggunakan *Health Matric Networks*

Metode: Penelitian ini menggunakan metode deskriptif kualitatif dengan rancangan studi kasus. Pengumpulan data menggunakan pedoman wawancara dengan 5 informan yaitu kepala puskesmas, Tim Keselamatan pasien (1 dokter, 1 bidan, 1 perawat) dan koordinator pelayanan poli gigi (1 perawat poli). Teknik pengambilan sampel menggunakan purposive sampling.

Hasil: Terdapat 6 tools Health Matrics Network (HMN) yang dipergunakan dalam mengukur evaluasi sistem informasi keselamatan pasien yaitu sumber daya sistem informasi, indikator sistem informasi, sumber data, manajemen data, produk informasi SIK, dan diseminasi dan penggunaan informasi SIK. Pada atribut atau variabel sumberdaya (kebijakan, sumber daya manusia, sarana dan prasarana dan keuangan), indikator kesehatan, sumber data, produk informasi dan penggunaan informasi pelaporan IKP sudah sesuai dengan kebijakan pedoman pelaporan insiden keselamatan pasien, dan PMK No. 11 Tahun 2017. Sementara untuk atribut

manajemen data dan produk informasi pada sistem informasi pelaporan keselamatan pasien belum terlaksana optimal.

Kesimpulan: sistem informasi pelaporan insiden keselamatan pasien yang ada di Puskesmas Gondomanan memerlukan perbaikan pada pengadaan SOP khusus pelaporan internal insiden keselamatan pasien yang merupakan bagian dari atribut manajemen data.

Kata Kunci: Evaluasi, HMN, Insiden, Keselamatan Pasien

BACKGROUND

Patient safety is a system that makes care safer, in other words patient safety prevents or minimizes incidents in providing services to patients. (1). Patient safety is the right of every patient which has been stated in Permenkes no 11 of 2017 both in hospitals and patients in FKTP including in puskesmas (2)

The National Patient Safety Agency in 2017 reported the number of incidents of patient safety incidents (IKP) in England in 2016 as many as 1.879.822 incidents (3). In Indonesia, from 2006–2011, according to data from the Hospital Patient Safety Committee (KKPRS), there were 877 incidents (4). Reports on Patient Safety Incidents (IKP) in Indonesia by province note that the province of D.I.Yogyakarta ranks third in the total number of incident cases throughout Indonesia, namely 13.8%(5). Reports on Patient Safety Incidents (IKP) in Indonesia by province note that the province of D.I.Yogyakarta ranks third in the total number of incident cases throughout Indonesia, namely 13.8%(4).

Incident patient safety reporting is a step in improving service quality (6). The IKP report requires an orderly and systematic recording and documentation system so that the available data can be analyzed in order to find the root of the problem which will later become a reference for making improvements and recommendations (7). However, the development of patient safety issues in puskesmas is not as dynamic as in hospitals. Most incidents reported in puskesmas are used as material for internal evaluation. (8)

Referring to policies related to patient safety, namely Regulation of the Minister of Health Number 11 of 2017 concerning Patient Safety, it is stated that every health service facility must collect performance data which includes incident reporting, accreditation, risk

management, utilization, service quality, and finance (ayat 2b) and health facilities are required to proactively evaluate all incidents (ayat 2c)(9), then it is necessary to evaluate the patient safety incident reporting system at the puskesmas. *The World Health Organization* (WHO) provides recommendations for health system evaluation tools by assessing the six components of the patient safety incident reporting system in puskesmas. *The World Health Organization* (WHO) provides recommendations for health system evaluation tools by assessing six components of a health information system, namely resources, indicators, data sources, data management, data quality, and dissemination or utilization(10).

Based on preliminary studies conducted in Dinas Kesehatan Kota Yogyakarta, it is known Puskesmas Gondomanan has a patient safety team. Based on preliminary studies at two Community Health Centers, it is known that there are still obstacles in reporting and documenting patient safety incidents, including officers who do not understand the types of incidents, the absence of human resources who are specifically responsible for recording and documenting patient safety incidents causing delays in the process of inputting incident data into the reporting system. The system for recording and documenting incidents at the health center level has not yet been evaluated so that the obstacles encountered are only resolved within the scope of the patient safety team.

This study generally aims to evaluate the system for recording reporting and documenting patient safety incidents at the Gondomanan Health Center by assessing the readiness of the system using the Health Matrix Network tools, namely evaluating available resources, system indicators, data sources, data management, data quality and

evaluating the utilization and patient safety incident reports (11).

METHOD

Qualitative research is a process of naturalistic inquiry that seeks deep understanding of social phenomena in nature(12). This research uses a case study approach. The research location is the Gondomanan Health Center which is located in the Yogyakarta City area. Data collection was carried out in September – November 2022, using in-depth interviews and observation techniques. The validity of the data is determined by the source triangulation method. The data analysis step used is the Miles and Huberman Model where after the data is obtained then data reduction is carried out, data display (data display) and conclusions or verification are made. (13)

There were 5 informants in the study consisting of the Head of the Puskesmas (Informant E), 1 patient safety team leader (doctor/Informant A) and two members of the patient safety team who were nurses (informant B) and midwives (Informant C), and 1 room coordinator (informant D). The informants in this study were selected using a purposive sampling technique, which is based on individual criteria that know the implementation of the patient safety incident reporting system in the research location.

RESULT

It is mandated in the Regulation of the Minister of Health Number 11 of 2017 that patient safety must be carried out in all health care facilities (14). With this regulation, every health service facility must organize patient safety, including at the Puskesmas. The regulations regarding patient safety in health care facilities state that health care facilities must report incidents online or in writing to the National Patient Safety Committee (KNKP)(15)(16).

To facilitate the reporting of Patient Safety Incidents (IKP), since the beginning of 2021 the Directorate of Quality and Accreditation of Health Services in collaboration with the Program and Information Section of the Secretariat of the

Directorate General of Health Services and the KNKP have developed an IKP Report Application at the Puskesmas (15). IKP reporting at the Gondomanan Health Center, Yogyakarta was carried out by all elements of the health workforce. In the process of collecting IKP data at the Puskesmas using an online form provided by the patient safety team at the Gondomanan Health Center, then the existing IKP data will be reported online through the IKP application to the KNKP.

The use of the IKP reporting online form prepared by the patient safety team at the Puskesmas and the use of the KNKP's IKP reporting application have so far not been evaluated from a user perspective and from a usefulness perspective. This research was conducted with the aim of evaluating the existing IKP reporting system at the Gondomanan Health Center using the Health Matrix Network (HMN) tools.

Based on this evaluation method, six variables were identified from the results of the study, namely available resources, indicator systems, data sources, data management, data quality and evaluating utilization and patient safety incident reports. The six variables are divided into 3 main themes as described in table 1 below

Table 1. Research Themes and Variables

Theme	Variable
Input	Resources Health Information System
Process	Indicator
	Data source
	Data Management
Output	Product Information
	Dissemination and use

a. Input

Resources in the use of IKP reporting information systems are divided into 4, namely policies, human resources, infrastructure resources and financial resources, which are described in the following research results

1. Policy

Based on the results of the interviews, it is known that the policies used in the IKP reporting process at the

Gondomanan Health Center refer to PMK 11 Tahun 2017 regarding Patient Safety, IKP Reporting Guidebook, and Technical Guidelines for Using the IKP Application at the Health Center, this is in accordance with the results of the following interviews

"The reference is PMK, reporting guidelines and technical guidelines for the web, we have archived the technical guidelines, they are also on the website" (Informan A)

"There's PMK, yeah, same guide on the web (The application of IKP)" (Informan B)

The results of the interviews are in line with the results of the observations made which are shown in table 2 below,

Tabel 2 Availability of Patient Safety Incident Reporting Policy

Number	Policy	Availability
1	PMK No 11 2017	One hand soft file and hard copy
2	Patient safety incident reporting guideline book	One hand soft file and hard copy
3	The guideline book of Patient Safety Incident application for primary Health Care	One hand soft file

2. Human Resources

Based on the results obtained that all health workers at the Puskesmas are responsible for reporting to the patient safety team using an online form, this is in accordance with the following

interview information,

"Everyone in our team (patient safety's team) is able to input and report the data incident to the E-IKP". (Informant A)

In the reporting process using the IKP KNKP application, it is known that there are no specific criteria for HR in charge of reporting through the application. If the cases at the Puskesmas have been recapitulated, members of the patient safety team can directly input or report them. This is in accordance with the interview excerpt, as follows,

"Actually, all health workers can do it (reporting) as long as there is some sort of brief introduction to data collection for input" (Informant B)

"There are no criteria, but what is certain is that we already have a patient safety team, later the patient safety team will upload it to the Ministry of Health's website" (Informant A)

3. Infrastructure

Based on the results obtained that the availability of facilities is available and is felt to be able to support the implementation of the IKP reporting system, this is according to the interview excerpt as follows:

"The facilities are sufficient, there is a computer, then there is wifi provided by the city government, so the infrastructure facilities are sufficient." (Informan C)

"Facilities available for office stationery, there is a copier machine, there is a whatsapp group if you want to send proof of incident patient safety, there is also a web (application)" (Informan A)

The suitability of the interview results is also supported by screenshots from the website Patient Safety Incident Reporting Application by KNKP that

used in Gondomanan Health Center in reporting, as shown in Figure 1 below,

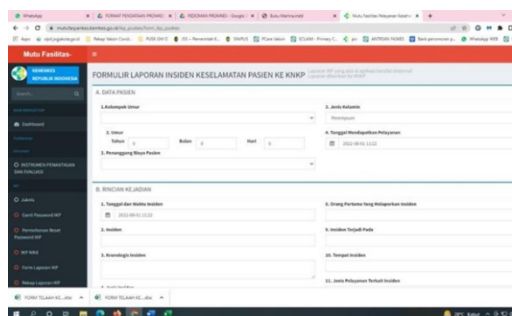


Figure 1. Dashboard Menu of Patient safety incident form

4. Budgeting

Based on the results of the interviews it is known that the budgeting of funds in the implementation of reporting using the patient safety incident reporting system from the puskesmas is allocated for office stationery and communication tools such as cellphones and computers, this is according to the interview excerpt, as follows:

“For reporting, we only provide office stationery, computers for photocopies, because there must be forms that we have to fill in, for case documentation, we ask friends to bring their own cellphones to document, after it's been documented, it's sent to the group, because we have their own quality group, so after doing their assignments they immediately share it so it can be documented immediately, if the wifi is from the city government” (Informant E)

The results of the study show that the budget for reporting patient safety incidents is only allocated for the procurement of infrastructure, there is no specific allocation for training in reporting patient safety incidents using online forms and using applications from the KNKP

“there isn't any (training fund) that's usually the health office that organizes

socialization on how to fill in first” (Informant C)

b. The Process Theme

1. Indicator

Data indicators collected at the Puskesmas and reported were based on internal (provided by the Puskesmas) and external (Application) report forms. The form indicators provided by the Puskesmas in print consist of patient data, types of incidents, details of events, analysis of the causes of incidents and recommendations. Meanwhile, the indicator data on the E-IKP application form are patient identity, incident details, investigation results and analysis, recap menu Monthly, and patient safety case monitoring menu. This is in accordance with the results of interviews with the following research informants

“...The difference is that the data includes identity (patient), risk analysis, type, for example KTD, KNC, KTC, Sentinel. KPC, location of incident, recommendations, but IKP is more complete because there is also monitoring and monthly recap” (Informant C)

“the contents of the form provided refer to the Ministry of Health's IKP reporting policy, but for that incident the form is more complete, if on the website more data is entered” (Informant A)

Based on the results of the interviews and document review in Figure 1, it is known that the indicators used are in accordance with policies related to patient safety incident reporting. However, in the reporting of indicators uploaded using the patient safety incident application (E-IKP) there are time constraints as stated from the results of the following interviews,

“That’s right, when we’ve finished recapping, we enter, but sometimes there are, for example, like yesterday, there was a case that was only submitted, but it wasn’t completely written on the form, so we asked the delegated unit to fill it in, then we input it to the web” (Informant A)

“Sometimes, if there is a case, when there is a lot of work, all the indicators are not filled in. When we enter, we will confirm the blank data, for example, the person who is responsible for the patient’s costs or the age of the patient” (Informant C)

2. Data Sources

The source of patient safety data at the Gondomanan’s primary health care comes from the KP’s daily census reports which are provided in print and online, this is in accordance with the results of interviews with the following informants,

“If there are cases, we will report them directly (word of mouth), if there are no cases, they will usually be asked later when the quality team goes around collecting forms” (Informant D)

“Well, the data source from the unit report is then entered into the Google form” (Informant C)

Incident data sources at the Puskesmas are generally sufficient and can be used in E-IKP reporting, but there are several obstacles including the time for reporting incidents on forms carried out by units that exceed time limit about 2 x 24-hour

“the schedule is that every Thursday I go around to the unit to collect the hard ones if there’s nothing to fill in the form (online), when there is a case the form sometimes hasn’t

been filled in but it’s been reported we’ve resolved it too” (Informant A)

3. The Data Management

Data management is related to the process of collecting, analyzing, and presenting data. Based on the results of the interviews, it is known that there is no SOP for reporting incidents both internally and externally, this is in accordance with what the informant conveyed below,

“There is no standard operating procedure yet, but the patient safety team has socialized how to fill out internal report forms” (Informant D)
“The SOP has not been made, only from the report manual and from the application report technical guidelines” (Informant B).

Even though there is no SOP related to incident reporting both internally and externally, health workers know that the data collection process is carried out in each poly by using forms provided online or in print with the standard reporting conditions for a maximum of 2 x 24 hours.

“For the record, for now, we are distributing incident forms to the coordinator of the room, if there are cases, they can be reported directly, so the next day, input them into the form” (Informant A)

“If we are normal, I mean, yesterday I was only at the poly, there was an incident, most of all, we said there was an incident. So the incident is handled first and then we report it to the patient safety team” (Informant D)

Regarding reporting using the E-IKP application, it is known that reporting is carried out every 25th of the current month. This was conveyed in the following interview results,

“That's usually at the end of the month, usually on the 25th we've started collecting data so at the end of the month we've entered it on the Ministry of Health's website” (Informan B).

“So that we don't forget, every month before the 25th, we (the patient safety team) remind each other whether the unit has filled out the form or not.” (Informan C).

c. The Output Theme

1. Product Information

Assessment of information products based on timeliness and completeness of data in the collection of reports to the IKP KNKP application. Based on the research results, it is known that the Puskesmas Gondomanan always reports on time, this is in accordance with the following informant's statement,

“So, at the end of the month, before the date 25th, we have collected the data in each poly, then we also check with the person in charge at the poly, it's true that there was no such incident, if there isn't, we usually fill in nil, but if there is later dig deeper” (Informan C)

“Is there a case or not, every 25th it must be inputted into the system, usually the 25th is a Sunday it is filled in before then, but if it is late to send it in the application there is information that it has been past how many days the data has not been reported” (Informan A)

For the completeness of the data reported to be divided into two, namely data written into internal reports and data inputted into the IKP application. The data contained in the internal form is often incomplete, this is in accordance with the results of the following interviews,

“the form is sometimes incomplete so it is confirmed again” (Informan A dan B)

In the form contained in the E-IKP application, the data entered can be confirmed to be complete because the system will immediately give a warning if the data entered is incomplete. This is in accordance with the following interview.

“Before it is sent, there is writing that the data will be sent later, there is an option not to send it, if you have clicked send but something has not been filled in, a warning appears that the data failed to be sent because of what, for example, because the grading has not been filled out” (Informan A)

“Because using the web, it's more thorough, there is information on what data is missing, we complete it, if it is successful, there is a notification that the data has been successfully sent” (Informan B)

2. Dissemination and use

Incident report data collection can be used in the internal decision-making process of the puskesmas. From the results of the interviews, it was found that there was feedback given by the head of the puskesmas regarding the incident report submitted, this is in line with the following interview information,

“if there is a case reported at the monthly meeting the feedback is a suggestion to be more thorough and careful in providing services” (Informan A)

“because it can be handled directly at the poly and is not a high risk so it is not directly conveyed to the head of the Puskesmas, when the monthly meeting is just informed” (Informan C)

Meanwhile, for disseminating information and using the IKP report,

it is only used for the internal processes of the puskesmas, as stated by the following informant,

“If there are cases, we will discuss them during the meeting and make them a learning process and will later be included in the Puskesmas performance report” (Informan E)

“the data is only for internal purposes so it is material for discussion and service improvement” (Informan B)

DISCUSSION

1. Input

Health information system resources consist of components of policy resources, human resources, infrastructure and financial resources (17).

In terms of policy, based on the results of interviews and observations, it is known that the reporting of patient safety cases at the Puskesmas Gondomanan is appropriate and refers to PMK No. 11 of 2017 concerning Patient Safety in Health Service Facilities, the Handbook for Reporting Patient Safety Incidents and Technical Instructions for Using the Application Safety Incident Reports patient (E-IKP) at the Puskesmas. Based on previous research, it is known that all health service activities can run in accordance with predetermined procedures and targets, there needs to be active outreach so that existing policies are carried out properly and doing continuity(18). Implementation of services in accordance with applicable policies or standards aims to improve and guarantee the quality of service to the community (19).

In terms of human resources, it is known that the HR carrying out the IKP reporting process is the patient safety team, this is in accordance with PMK No 11 of 2017, namely there is a patient safety team tasked with making reports both internally and externally. Based on the results of previous research, it is

known that the TKP-RS carries out its duties, one of which is to record, report incidents, analyze incidents including conducting Root Cause Analysis (RCA) and developing solutions to improve patient safety. (20).

The infrastructure used in the process of collecting and reporting IKP data consists of internal report forms and IKP report applications. The IKP internal report form conforms to the format contained in the Patient Safety Incident Reporting Guidelines book. While the reporting application used is an application designed by the KNKP of the Ministry of Health. In addition to providing appropriate human resources for the accuracy of filling out IKP reports, health care facilities also need to develop a computerized system for patient safety incident report forms.(21).

2. Process

In the evaluation of incident or case reporting processes using the health matrix network tools, there are three variables studied, namely data indicators, data sources and data management. (22)

Judging from the data indicators used in incident or case reports, they are in accordance with those listed in the patient safety incident reporting guidebook, namely patient data, location, type of incident, risk analysis, treatment, incident contributing factors.(23). The results of previous research mentioned that the use of indicators on the health data form was adjusted to a predetermined standard form (4). The use of appropriate health data indicators will increase the level of accuracy in data analysis and decision-making processes (11). The indicators used in data collection and retrieval must be valid (accurate, timely, complete and reliable) because they are used to analyze trends, assess service improvements, and compare differences in service delivery(1).

The source of data used in reporting incidents comes from the internal health center report form. The availability of this

data source is in line with PMK policy No. 11 of 2017, namely there is a patient safety incident form (internal) in health care facilities. The data source used to compile patient safety incident reports at the hospital comes from the incident report form submitted to the patient safety sub-committee. The report form is confidential and only authorized persons can access the data(1). The completeness of data sources refers to the sample forms contained in PMK No. 11 of 2017. The completeness and accuracy of data sources will certainly have an impact on the information products produced, the validity of the information available will also have an impact on individual and community health planning and management. (22).

In terms of data management, based on the results of interviews and observations, it is known that the health workers who found the IKP case had reported it within 2x24 hours and the reporting flow was in accordance with the policy in PMK No. 11 of 2017 and Guidelines for Patient Safety Incident Reporting. The results of this study are in line with previous research, namely data collection on patient safety incidents was carried out by finding incidents and reporting incidents by writing on the patient safety incident report form which was then submitted to the patient safety subcommittee. This data is reported within 2 x 24 hours. Data collected to compile reports include patient data, incident details, risk grading results, results of simple investigations for blue and green risk grading(1). However, this is still not done optimally. The obstacle faced from the incident reporting process is that there is no internal incident reporting SOP yet. Implemented patient safety measures must be carried out in accordance with predetermined procedures and targets so that the risk analysis is carried out in accordance with applicable legal regulations, as well as solutions for patient safety in health

centers that are on target and in accordance with the objectives.(24).

3. Output

In evaluating the output of IKP reporting using the health matrix network tools, there are two variables studied, namely information products and the presentation and use of incident reports (1)

From the results of interviews and observations it is known that the product information generated from internal reports and reports using the IKP KNKP application is complete. Completeness of IKP data is important because the information generated will be used for decision making and process improvement. If the data is incomplete, it will be difficult for management to make improvements and prevent similar incidents (17).

From the results of the interviews, it is known that the presentation and use of patient safety incident reports are presented in the form of reports which are disseminated at internal meetings every month and are used for decision making related to patient safety programs. One of the utilizations of the results of patient safety incident reports for decision making. In previous research, it was known that the results of patient safety incident reports were used as a reference for decision making.(1).

CONCLUSION

Based on the research results, it is known that the evaluation of the Patient Safety Incident Reporting Information System uses the Health Matrix Network which is in accordance with PMK policy No. 11 of 2017, Guidelines for reporting Patient Safety Incidents and technical instructions for Using the Patient Safety Incident Report Application (E-IKP) is on variable resources, indicators of data sources, product information and presentation and use of case report data. Meanwhile, the incidence report data management variable has not been carried out optimally.

Further research is needed regarding the factors that influence the behavior of officers in reporting patient safety incidents at the Puskesmas

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