

Patient Safety, Incident Report, And Utilization Information Technology

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Abstract: Patient safety is an important issue in the field of health at the international level, especially in terms of health services. However, there are still a number of incidents related to health services. One of the things that caused the incident was because of the many unwanted events that befall the patient outside of his illness. As a result the patient has an injury can even result in death. On the other hand, technological developments have developed rapidly along with the increase in knowledge in the world. One of them is the use of online-based incident reporting systems. Therefore, we need an online-based application that can facilitate incident reporting, so that unwanted events can be immediately followed up.

Index Terms: Patient Safety, Incident Report, Technology

1. INTRODUCTION

Patient safety is a problem faced by hospitals throughout the world, where coordination and rapid action in managing patient safety is carried out by the union formed by WHO in 2004 so that patient safety in the world is better and more organized [1]. Various events that occur in the world that are the background of the formation of this union one of them extraordinary events that occur in America such as there are 44,000 errors of operation wrong side every year [2,3] and dosage calculation errors that cause death [4]. Judging from the magnitude of the impact that occurs, making patient safety a mandatory thing that must be considered. Concern about patient safety is a must for all health services. This is in line with the statement of Donaldson, Corrigan, and Kohn which states that patient safety is used as a basis that must be instilled in all service providers in providing health services and as a tool to improve quality and patient safety-based services [5]. Furthermore, patient safety activities include assessment, risk control, risk identification, reporting and incident analysis summarized in a patient safety system regulated by the government [6].

Patient Safety Incident (IKP) is an iceberg problem in the world [7]. IKP occurs when someone works not in accordance with the established SOP [8]. Various cases that occur that affect the patient such as falling patients, one side of surgery, wrong identification of the patient [5], errors in the use of medical devices [9] and among them are medical errors [10]. On the other hand, when compared to the number of deaths caused by cancer, AIDS and motor vehicle accidents, the number of incidents is greater than that [5] and in fact these errors can be used as learning material so that they do not reoccur [1]. Therefore, incident reporting is important in improving the basic system in a hospital. The initial step in improving patient safety is to build a patient safety culture [11]. A well-managed patient safety culture can make a hospital

safe and prosperous [12]. In addition, the culture is able to create a safe atmosphere for patients when given services [13]. Good organizational culture, shared commitment and fair attitude given by the organization can influence the attitude of someone related to safety so that services become more secure and comfortable [14]. Implementation of a low safety culture will lead to incidents of patient safety in hospitals [15]. Thus, safety culture is the strongest foundation in the application of patient safety in hospitals. Many hospitals do not report incidents because they are considered a disgrace to someone or the hospital. Someone feels more afraid to be blamed than to get a punishment, even though the punishment varies according to the level of error [16]. In addition, fear of being expelled from work or being sanctioned is still a reason for someone not to report [16-18]. On the other hand, reporting patient safety incidents manually spends time, resources to communicate and must make sacrifices in work units [19]. Therefore, a culture of blaming and increasing work for health workers makes reporting levels of patient safety incidents low. Incident reporting is one of the priority areas in the union established by WHO in 2004, which deals specifically with incident reporting [1]. We can take learning and evaluation by learning from previous incidents, so that it can be used to change behavior, increase staff knowledge and develop staff awareness of risks in service [7]. There are several factors that influence the reporting of patient safety incidents, which are procedures established by the hospital, organizational factors, epistemological factors, cultural factors, no regulation, limited knowledge and competence, negative perceptions about IKP reporting, lack of leadership commitment [20,39]. However, besides the use of Incident reporting is one of the priority areas in the union established by WHO in 2004, which deals specifically with incident reporting [1]. We can take learning and evaluation by learning from previous incidents, so that it can be used to change behavior, increase staff knowledge and develop staff awareness of risks in service [7]. There are several factors that influence the reporting of patient safety incidents, which are procedures established by the hospital, organizational factors, epistemological factors, cultural factors, no regulation, limited knowledge and competence, negative perceptions about IKP reporting, lack of leadership commitment [20,39]. However, besides the use of technology in reporting, this also affects the number of incidents reported [20]. Therefore, researchers want to include information technology in reporting patient safety incidents. Technological developments occur in all lines of life [21]. A more modern society that wants something instant, efficient and effective.

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The use of this technology has positive and negative impacts, depending on how we utilize technology [22]. Various examples of the use of information technology in the world of health such as the use of e-medicine, e-laboratory, online doctors, tele medicine [23,24]. Good technology users not only see the ease of operation, but also see the level of usefulness of the application system [25,40]. Other impacts of salain technology make it easier to obtain information also have an economic impact, such as lower treatment costs compared to traditional medicine [26] and e-medicine helps patients coordinate with health care providers about their illness so that the impact experienced is not serious [27]. Therefore, the use of technology in the health reporting system becomes important. technology in reporting, this also affects the number of incidents reported [20]. Therefore, researchers want to include information technology in reporting patient safety incidents. Technological developments occur in all lines of life [21]. A more modern society that wants something instant, efficient and effective. The use of this technology has positive and negative impacts, depending on how we utilize technology [22]. Various examples of the use of information technology in the world of health such as the use of e-medicine, e-laboratory, online doctors, tele medicine [23,24]. Good technology users not only see the ease of operation, but also see the level of usefulness of the application system [25,40]. Other impacts of salain technology make it easier to obtain information also have an economic impact, such as lower treatment costs compared to traditional medicine [26] and e-medicine helps patients coordinate with health care providers about their illness so that the impact experienced is not serious [27]. Therefore, the use of technology in the health reporting system becomes important. Incidence of patient safety incidents in Panemabahan Senopati Hospital from 2015 to 2018 continues to increase [28]. This is because the culture of reporting patient safety incidents increases from time to time, but not all units report patient safety incidents due to fear of being blamed, punished, the reporting system uses a computer network which uses computer together with service data entry in the service unit [29]. Because of the limitations of the existing reporting system, unwanted events that occur in non-service units cannot be reported because there is no clarity on who is responsible for reporting.

THEORITICAL FRAMEWORK

2.1.1. PATIENT SAFETY

Patient safety is an important system that can affect service and quality of health services which includes risk assessment, identification, management of patient risk, reporting and analysis of incidents as well as the ability to learn from incidents that occur so as to implement solutions so as to minimize the occurrence of risks and prevent the occurrence back incident [6] and is an attempt to minimize the occurrence of injuries that have nothing to do with the history of the disease [35]

2.1.2. INJURY

Injury or Harm occurs because the officer does things that should not be done or does not do something that should be done and the impact of physical, social and psychological disorders. Harm types include: illness, injury, suffering, disability [35]

2.1.3. PATIENT SAFETY INCIDENT

A condition that might be the cause of an injury or potentially cause an injury that should not occur [35][36].

2.1.4. UNWANTED EVENTS

Incidents that occur in patients resulting in injuries caused by medical errors or not medical errors that are not a result of the patient's condition or illness.[35][36].

2.14 NEARLY INJURY EVENTS

An incident that occurs in a patient, which does not cause injury caused by health workers not doing something that should be done or doing something that should not be done and this can happen because of luck [35,36].

2.2 INTERNAL PATIENT SAFETY REPORTING

Nearly Reported Injury (KNC) and Unwanted Events (KTD) reported in writing that befall the patient, family of visitors, employees that occurred in the hospital[6,35]. Research on electronic / online reporting is interesting to study, one example of research on electronic incident reporting as conducted by Tuttle [43] and Hallerv [42], which examines web site-based incident reporting systems. Tuttle [43] relates that patient safety reporting using ERS (Electronic Patient Record) can improve reporting especially in the event of near injury, which so far has rarely been well documented / reported, but the most common error is coding errors both in the classification of events, impacts and locations and based on the survey results the level of employee satisfaction in using ERS, obtained fairly low results. Other research also conducted by Hallerv [42] on the use of the ERS system in incident reporting has resulted in an increase in incident reporting compared to when using handwritten reports, besides that the health task force felt safer in reporting incidents because confidentiality was guaranteed, but this system was still used locally in the surgical unit so that it has not been able to describe the state of the hospital and also often occurs system incompatibility in reading reporting information with the intention of the reporting unit and sometimes considered not to be an incident by the system because the counting system and forms are on the website.

2.1.5. FLOW REPORT OF INCIDENTS IN HOSPITALS

The flow of hospital incident reporting must go through the procedure below

1. Immediately follow up on the incident that occurred at the hospital to reduce the impact or unintended consequences.
2. Immediately make an incident report by filling out the Incident Report form and report it to superiors no later than 2 x 24 hours
3. Submit it to the supervisor (head of the room / unit / installation) then grading the risk of the incident
4. A simple form of investigation is carried out according to
5. The grading results will determine the form of investigation and analysis to be carried out as follows:

Blue Grade

: A simple investigation is carried out by the direct supervisor and the appointed working group with a minimum time of 2

Green Grade	weeks : A simple investigation is carried out by the direct supervisor and the appointed working group with a minimum time of 2 weeks
Yellow Grade	:Comprehensive investigation / RCA by the hospital patient safety team (TKPRS) with a minimum completion time of 45 days
Red Grade	:Comprehensive investigation / RCA by the hospital patient safety team (TKPRS) with a minimum completion time of 45 days

- Investigation results and incident reports are reported to the Patient Safety Team at the Hospital and will be analyzed again and re-grading to see whether there is a need for further investigation (RCA)
- Perform RCA if the results are regrading with Yellow / Red Grade by the Patient Safety Team.
- RCA results are analyzed and improvement reports are made in the form of Instructions / Safety Alerts so that events are not repeated and reported to the Director and given feedback to the relevant units.
- Work units analyze what the incident in each unit is like
- The Patient Safety Team regularly monitors and evaluates improvements.
- A simple investigative report / RCA is reported to the External Patient Safety Incident Report [6,35]

2.1.6. PATIENT SAFETY CULTURE

The Patient Safety Culture Survey is an instrument used to view patient safety cultures that measure health incident reporting by health workers. In its measurement, the patient safety culture survey consisted of 42 assessment items divided into 12 areas

- Openness of communication;
- Feedback and communication about mistakes
- Frequency of incident reports;
- Handoffs and changes in hospital;
- Management support for patient safety;
- Respond does not punish mistakes;
- Organizational learning - continuous improvement;
- Perception of patient safety in general;
- Staffing;
- Expectations and activities of supervisors / managers that support safety;
- Teamwork between hospital units;
- Teamwork in hospital units [6,35]

2.1.7. ONLINE INSIDEN RATE SYSTEM

The online incident-based reporting system is a system created efficiently so that the incident can be immediately followed up and can reduce the impact of the incident [19].

1. QR Code Scanner

QR Scanner is the result of the development of an android-based smartphone system [44], which is used by scanning QR Codes with a mobile camera. The form of the QR Code is a 2D

matrix [45].

2. WEBSITE

Website definition is a collection of web contained in which domain contains various information [46]. The Website consists of several pages i.e. the first page called the home page, and the next page is a self-contained page called webpage [47].

3 CONCLUSION

Patient safety, incident reporting and technology utilization are three things that cannot be separated. Advances in technology make it easy for hospital managers to make a number of applications that can simplify the reporting process. The accuracy of the data provided by the reporter will be able to minimize the recurrence of patient safety incidents. The results of this study form the basis of further research related to the use of technology in reporting patient safety incidents by creating an incident reporting system using a barcode system that is integrated with IT systems in hospitals. With easy access and ensuring confidentiality of reporting data, it is hoped that it can increase the awareness and willingness of health workers in hospitals. Besides this, the data obtained can be used to improve the quality and service in hospitals.

REFERENCES

- Donaldson, S. L. J., & Fletcher, M. G. (2006). The WHO World Alliance for Patient Safety: towards the years of living less dangerously. *Medical Journal of Australia*, 184(S10), S69-S72.
- Clarke, J. R., Johnston, J., & Finley, E. D. (2007). Getting surgery right. *Annals of surgery*, 246(3), 395.
- Garnerin, P., Ares, M., Huchet, A., & Clergue, F. (2008). Verifying patient identity and site of surgery: improving compliance with protocol by audit and feedback. *BMJ Quality & Safety*, 17(6), 454-458.
- Pham, J. C., Aswani, M. S., Rosen, M., Lee, H., Huddle, M., Weeks, K., & Pronovost, P. J. (2012). Reducing medical errors and adverse events. *Annual review of medicine*, 63, 447-463.
- Donaldson, M. S., Corrigan, J. M., & Kohn, L. T. (Eds.). (2000). *To err is human: building a safer health system* (Vol. 6). National Academies Press.
- Sakit, K. K. P. R. (2015). *Pedoman Pelaporan Insiden Keselamatan Pasien (IKP)(Patient Safety Incident Report)*.
- Anderson, J. E., Kodate, N., Walters, R., & Dodds, A. (2013). Can incident reporting improve safety? *Healthcare practitioners' views of the effectiveness of incident reporting. International journal for quality in health care*, 25(2), 141-150.
- Sakinah, S., Wigati, P. A., & Arso, S. P. (2017). Analisis Sasaran Keselamatan Pasien Dilihat dari Aspek Pelaksanaan Identifikasi Pasien dan Keamanan Obat di RS Kepresidenan RSPAD Gatot Soebroto Jakarta. *Jurnal kesehatan Masyarakat (e-Journal)*, 5(4), 145-152.
- Thomas, A. N., & Panchagnula, U. (2008). Medication-related patient safety incidents in critical care: a review of reports to the UK National Patient Safety Agency. *Anaesthesia*, 63(7), 726-733.
- World Health Organization. (2015). *World report on ageing and health*. World Health Organization.
- Irviranty, A. (2018). Analisis Budaya Organisasi dan

- Budaya Keselamatan Pasien Sebagai Langkah Pengembangan Keselamatan Pasien di RSIA Budi Kemuliaan Tahun 2014. *Jurnal Administrasi Rumah Sakit Indonesia*, 1(3).
- [12] Goncalves, A. P., Kanegae, G., & Leite, G. (2012) Safety Culture maturity and risk management maturity in industrial organizations. In International conference on industrial engineering and operations management.
- [13] Kirk, S., Parker, D., Claridge, T., Esmail, A., & Marshall, M. (2007). Patient safety culture in primary care: developing a theoretical framework for practical use. *BMJ Quality & Safety*, 16(4), 313-320.
- [14] Maysarah, S., & RAHARDJO, M. (2015). ANALISIS PENGARUH BUDAYA ORGANISASI, Keadilan Organisasi, dan Komitmen Organisasi Terhadap Organizational Citizenship Behavior (OCB)(Studi pada PT Kereta Api Indonesia (Persero) Daerah Operasi 4 Semarang) (Doctoral dissertation, Fakultas Ekonomika dan Bisnis).
- [15] Rahayu, S., Sulistiadi, W., & Trigono, A. (2018). Pengaruh Karakteristik Individu dan Implementasi Budaya Keselamatan Pasien Terhadap Insiden Keselamatan Pasien di Rumah Sakit Umum Daerah Banten. *Jurnal Manajemen dan Administrasi Rumah Sakit Indonesia*, 2(2), 91-114.
- [16] Hashemi, F., Nasrabadi, A. N., & Asghari, F. (2012). Factors associated with reporting nursing errors in Iran: a qualitative study. *BMC nursing*, 11(1), 20.
- [17] Hartnell, N., MacKinnon, N., Sketris, I., & Fleming, M. (2012). Identifying, understanding and overcoming barriers to medication error reporting in hospitals: a focus group study. *BMJ Qual Saf*, 21(5), 361-368.
- [18] Gunawan, G., Harijanto, H., & Harijanto, T. (2015). Analisis Rendahnya Laporan Insiden Keselamatan Pasien di Rumah Sakit. *Jurnal Kedokteran Brawijaya*, 28(2), 206-213.
- [19] Takeda, H., Matsumura, Y., Nakajima, K., Kuwata, S., Zhenjun, Y., Shanmai, J., ... & Inoue, M. (2003). Health care quality management by means of an incident report system and an electronic patient record system. *International journal of medical informatics*, 69(2-3), 285-293.
- [20] Ocloo, J., & Fulop, N. (2010). NIHR King's Patient Safety and Service Quality Centre (PSSQ) Organisational Governance Programme
- [21] Tjandrawinata, R. R. (2016). Industri 4.0: Revolusi industri abad ini dan pengaruhnya pada bidang kesehatan dan bioteknologi. *Jurnal Medicinus*, 29(1).
- [22] Ngafifi, M. (2014). Kemajuan teknologi dan pola hidup manusia dalam perspektif sosial budaya. *Jurnal Pembangunan Pendidikan: Fondasi dan Aplikasi*, 2(1).
- [23] Wardiana, W. (2002). Perkembangan teknologi informasi di Indonesia.
- [24] Supono, A. R., Komputer, F. I., Gunadarma, U., Raya, J. M., & Cina, P. (2006). Penerapan Teknologi Informasi Pada Dunia Kedokteran: Peluang dan Hambatan Penerapan Pengobatan Jarak Jauh Berbasis Internet di Negara Berkembang. Bandung: Informatika.
- [25] Ketikidis, P., Dimitrovski, T., Lazuras, L., & Bath, P. A. (2012). Acceptance of health information technology in health professionals: An application of the revised technology acceptance model. *Health informatics journal*, 18(2), 124-134.
- [26] Ornstein, K., Smith, K. L., Foer, D. H., Lopez-Cantor, M. T., & Soriano, T. (2011). To the hospital and back home again: a nurse practitioner-based transitional care program for hospitalized homebound people. *Journal of the American Geriatrics Society*, 59(3), 544-551.
- [27] Lestari, Y. (2018). Telehealth: Elektronik House Call System, Solusi Mengurangi Biaya Perawatan Kesehatan. *Jurnal Ilmiah Keperawatan Sai Betik*, 13(2), 244-248.
- [28] Penambahan Senopati Bantul, 2018, Laporan Komite Mutu dan Keselamatan Pasien RSUD Panembahan Senopati Bantul Tahun 2018, Bantul.
- [29] Penambahan Senopati Bantul, 2018, Survei Budaya Keselamatan Pasien RSUD Panembahan Senopati Bantul Tahun 2018, Bantul.
- [30] Peraturan Menteri Kesehatan Republik Indonesia Nomor 11 Tahun 2017 Tentang Keselamatan Pasien, Jakarta, Indonesia.
- [31] Sakit, K. K. P. R. (2008). Pedoman Pelaporan Insiden Keselamatan Pasien (IKP)(Patient Safety Incident Report).
- [32] H.M., Jogiyanto, Analisis dan Desain Sistem Informasi Pendekatan Terstruktur, Andi Offset, Yogyakarta, 1989.
- [33] Wijayanto, A., Untara, M., & Budianti, A. PENYEDIAAN SISTEM INFORMASI BUDAYA KESELAMATAN PTLR-BATAN.
- [34] Tristantia, A. D. (2018). Evaluasi Sistem Pelaporan Insiden Keselamatan Pasien di Rumah Sakit. *Jurnal Administrasi Kesehatan Indonesia*, 6(2), 83-94.
- [35] Panesar, S., Carson, A., Salvilla, A., & Sheikh, A. (2017). At A Glance Keselamatan Pasien dan Peningkatan Mutu Pelayanan Kesehatan. Jakarta: Erlangga.
- [36] RI, K. (2017). Peraturan Menteri Kesehatan Republik Indonesia Nomor 11 Tahun 2017 tentang Keselamatan Pasien. Jakarta: Kementerian Kesehatan Republik Indonesia.
- [37] Hodgen, A., Ellis, L., Churruca, K., & Bierbaum, M. (2017). Safety culture assessment in health care: a review of the literature on safety culture assessment modes. Sydney: Australian Commission on Safety and Quality in Health Care.
- [38] Elliott, P., Martin, D., & Neville, D. (2014). Electronic clinical safety reporting system: a benefits evaluation. *JMIR medical informatics*, 2(1), e12.
- [39] A. Susanti, "Kinerja Tim Keselamatan Pasien Rumah Sakit di RSUD Hj Anna Lasmanah Banjarnegara", Universitas Jendral Soedirman. 2015
- [40] Rahayu, S. (2009). Pengembangan Model Sistem Informasi Rumah Sakit Pada Instalasi Radiologi Rawat Jalan Untuk Mendukung Evaluasi Pelayanan Di Rumah Sakit Paru Dr. Ario Wirawan Salatiga (Doctoral dissertation, Program Pasca Sarjana Universitas Diponegoro).
- [41] ZAHRO, S. (2016). PENGEMBANGAN SISTEM PENCATATAN DAN PELAPORAN INSIDEN KESELAMATAN PASIEN (IKP) BERBASIS WEB DI RUMAH SAKIT (Doctoral dissertation, Universitas Gadjah Mada).
- [42] Haller, G., Myles, P. S., Stoelwinder, J., Langley, M., Anderson, H., & McNeil, J. (2007). Integrating incident reporting into an electronic patient record system. *Journal of the American Medical Informatics Association*, 14(2), 175-181.
- [43] Tuttle, D., Holloway, R., Baird, T., Sheehan, B., & Skelton,

- W. K. (2004). Electronic reporting to improve patient safety. *BMJ Quality & Safety*, 13(4), 281-286.
- [44] Lauren, G., & Murtiwiati, M. (2019). Rancang Bangun Aplikasi Pembelajaran Budaya Indonesia Untuk Anak Sekolah Dasar Berbasis Android. *Jurnal Ilmiah KOMPUTASI*, 12(2), 1-10.
- [45] Dagan, I., Binyamin, G., & Eilam, A. (2016, November). Delivery of QR codes to cellular phones through data embedding in audio. In *2016 IEEE International Conference on the Science of Electrical Engineering (ICSEE)* (pp. 1-4). IEEE.
- [46] Yuhefizar, M., & Hidayat, R. (2009). Cara Mudah Membangun Website Interaktif Menggunakan Content Management System Joomla Edisi Revisi. Jakarta: PT Elex Media Komputindo, 2-4.
- [47] Abbas, W. (2013). Analisa Kepuasan Mahasiswa Terhadap Website Universitas Negeri Yogyakarta (UNY). *Prosiding SNST Fakultas Teknik*, 1(1).
- [48] Sabri, M. A. (1996). Psikologi pendidikan: berdasarkan kurikulum nasional. Pedoman Ilmu Jaya.
- [49] Robbins, S. P., & Robbins, S. P. (2008). Organisational behaviour (pp. 574-607). Frenchs Forest, NSW: Pearson Education Australia.
- [50] M. Alisuf Sabri, Psikologi Pendidikan berdasarkan Kurikulum Nasional, (Jakarta : Pedoman Ilmu Raya, 2010), hlm. 8
- [51] Notoatmodjo, S. (2003). Prinsip-prinsip dasar ilmu kesehatan masyarakat. Jakarta: Rineka Cipta, 10.
- [52] Anggraeni, A. (2015). Hubungan Tingkat Pengetahuan Ibu tentang Imunisasi Dasar Lengkap Anak dengan Kepatuhan Melaksanakan Imunisasi (Doctoral dissertation, Fakultas Kedokteran (UNISBA)).
- [53] Riyadiningsih, H. (2012, June). Peran kondisi psikologis dan karakteristik pribadi dalam pengembangan kepemimpinan efektif: sebuah tinjauan konseptual. In *SEMINAR NASIONAL DAN CALL FOR PAPERS. FAKULTAS EKONOMI UNISBANK*.
- [54] Fitriyadi, H. (2013). Integrasi teknologi informasi komunikasi dalam pendidikan: potensi manfaat, masyarakat berbasis pengetahuan, pendidikan nilai, strategi implementasi dan pengembangan profesional. *Jurnal Pendidikan Teknologi dan Kejuruan*, 21(3).
- [55] Soekidjo, N. (2007). Kesehatan masyarakat ilmu dan seni. Rineka Cipta, Jakarta.
- [56] Sudjana, N. (2005). Metode statistika. Bandung: Tarsito, 168.