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# June 2021 - Volume 17 - Issue 4 : Journal of Patient Safety

[Home](#) > June 2021 - Volume 17 - Issue 4

[Previous Issue](#) | [Next Issue](#)



June 2021 - Volume 17 - Issue 4

pp: 239-333,e255-e366

[Table of Contents Outline](#)

[eTOC Alerts](#)

[Contributor Index](#)

## Original Studies

### [What Contributes to Diagnostic Error or Delay? A Qualitative Exploration Across Diverse Acute Care Settings in the United States](#)

Barwise, Amelia; Leppin, Aaron; Dong, Yue; More

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Ratigan, Amanda Rondinelli; Michaud, Veronique; Turgeon, Jacques; More

Journal of Patient Safety. 17(4):249-255, June 2021.

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### [Redeployment of Health Care Workers in the COVID-19 Pandemic: A Qualitative Study of Health System Leaders' Strategies](#)

Panda, Nikhil; Sinyard, Robert D.; Henrich, Natalie; More

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### [COVID-19–Related Circumstances for Hospital Readmissions: A Case Series From 2 New York City Hospitals](#)

Choi, Justin J.; Contractor, Jigar H.; Shaw, Amy L.; More

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### [Examining Causes and Prevention Strategies of Adverse Events in Deceased Hospital Patients: A Retrospective Patient Record Review Study in the Netherlands](#)

Smits, Marleen; Langelaan, Maaïke; de Groot, Janke; More

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### **[Impact of Medication Reviews Delivered by Community Pharmacist to Elderly Patients on Polypharmacy: A Meta-analysis of Randomized Controlled Trials](#)**

Tasai, Sudprattana; Kumpat, Nattikarn; Dilokthornsakul, Piyameth; More

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### **[The Relationship Between Culture of Safety and Rate of Adverse Events in Long-Term Care Facilities](#)**

Abusalem, Said; Polivka, Barbara; Coty, Mary-Beth; More

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Abolhassani, Nazanin; Vollenweider, Peter; Waeber, Gérard; More

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Antognini, Joseph F.

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Gambashidze, Nikoloz; Hammer, Antje; Wagner, Anke; More

Journal of Patient Safety. 17(4):e280-e287, June 2021.

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### **[Perceptions of Pediatric Hospital Safety Culture in the United States: An Analysis of the 2016 Hospital Survey on Patient Safety Culture](#)**

Gampetro, Pamela J.; Segvich, John P.; Jordan, Neil; More

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Dhamanti, Inge; Leggat, Sandra; Barraclough, Simon; More

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Vrotsou, Kalliopi; Pérez-Pérez, Pastora; Alías, Gorka; More

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### [\*\*Teamwork Among Medicine House Staff During Work Rounds: Development of a Direct Observation Tool\*\*](#)

Weingart, Saul N.; Coakley, Meagan; Yaghi, Omar; More

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### [\*\*Investigating the Impact of Intensive Care Unit Interruptions on Patient Safety Events and Electronic Health Records Use: An Observational Study\*\*](#)

Khairat, Saif; Whitt, Stevan; Craven, Catherine K.; More

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Tedesco, Dario; Moghavem, Nuriel; Weng, Yingjie; More

Journal of Patient Safety. 17(4):e327-e334, June 2021.

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### **[A Qualitative Analysis of Outpatient Medication Use in Community Settings: Observed Safety Vulnerabilities and Recommendations for Improved Patient Safety](#)**

Lyson, Helena C.; Sharma, Anjana E.; Cherian, Roy; More

Journal of Patient Safety. 17(4):e335-e342, June 2021.

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Soncrant, Christina; Neily, Julia; Sum-Ping, Sam John T.; More

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### **[Assessment of Oral Anticoagulant Adverse Drug Events Before and After Implementation of a Real-Time Clinical Surveillance Tool](#)**

Daniel, Joel W.; Kramer, Joan; Burgess, L. Hayley

Journal of Patient Safety. 17(4):e350-e354, June 2021.

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Nizet, Pierre; Tching-Sin, Martine; Dubreuil, Clémentine; More

Journal of Patient Safety. 17(4):e355-e359, June 2021.

- [Abstract](#)
- 
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- [1](#)
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# Comparison of Patient Safety Incident Reporting Systems in Taiwan, Malaysia, and Indonesia

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# Comparison of Patient Safety Incident Reporting Systems in Taiwan, Malaysia, and Indonesia

Inge Dhamanti, PhD,\*†‡ Sandra Leggat, PhD,‡ Simon Barraclough, PhD,‡  
Hsun-Hsiang Liao, MS,§ and Nor'Aishah Abu Bakar, MD||

**Objectives:** Incident reporting is one of the tools used to improve patient safety that has been widely used in health facilities in many countries. Incident reporting systems provide functionality to collect, analyze, and disseminate lessons learned to the wider community, whether at the hospital or national level. The aim of this study was to compare the patient safety incident reporting systems of Taiwan, Malaysia, and Indonesia to identify similarities, differences, and areas for improvement.

**Methods:** We searched the official Web sites and homepages of the responsible leading patient safety agencies of the three countries. We reviewed all publicly available guidelines, regulatory documents, government reports that included policies, guidelines, strategy papers, reports, evaluation programs, as well as scientific articles and gray literature related to the incident reporting system. We used the World Health Organization components of patient safety reporting system as the guidelines for comparison and analyzed the documents using descriptive comparative analysis.

**Results:** Taiwan had the most incidents reported, followed by Malaysia and Indonesia. Taiwan Patient Safety Reporting (TPR) and the Malaysian Reporting and Learning System had similar attributes and followed the World Health Organization components for incident reporting. We found differences between the Indonesian system and both of TPR and the Malaysian system. Indonesia did not have an external reporting deadline, analysis and learning were conducted at the national level, and there was a lack of transparency and public access to data and reports. All systems need to establish a clear and structured incident reporting evaluation framework if they are to be successful.

**Conclusions:** Compared with TPR and Malaysian system, the Indonesian patient safety incident reporting system seemed to be ineffective because it failed to acquire adequate national incident reporting data and lacked transparency; these deficiencies inhibited learning at the national level. We suggest further research on the implementation at the hospital level to see how far national guidelines and policy have been implemented in each country.

**Key Words:** patient safety, incident reporting, WHO components of reporting system, country comparison

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Patient safety incident reporting systems are passive forms of surveillance that depend on health care workers to report relevant incidents.<sup>1</sup> Such systems serve to collect, analyze, and disseminate lessons learned to the wider community whether at the hospital or national level. The main purpose of these systems is

to enable organizations and their staff to learn from past incidents and prevent similar incidents from recurring.

The various purposes of patient safety incident reporting systems have been identified in the literature. According to the World Health Organization (WHO), the purposes of reporting within the institution are to detect errors and hazards, investigate the root cause of an underlying problem, and improve the system by reducing errors from recurring.<sup>2</sup> Other purposes are to collect patient safety information from care providers, report errors, detect preventable adverse events, identify hazards and risks for patients, formulate and disseminate recommendations for system change to reduce error rates, and improve patient safety.<sup>2–5</sup> Various countries have started to establish their own incident reporting systems. The WHO has published guidelines for adverse event reporting and learning systems.<sup>2</sup>

The aims of this study were to compare the patient safety incident reporting systems of Taiwan, Malaysia, and Indonesia and to identify areas for improvement. All countries are Asian country that have implemented incident reporting system especially for Taiwan, and the incident reporting system was established at almost the same time as the Indonesian system.

## METHODS

### Search Strategy

We searched the official Web sites and homepages of the responsible leading agencies or organizations or the patient safety agencies of the three countries. These included as the Taiwan Joint Commission, Malaysian Patient Safety Council, and the National Committee on Patient Safety in Indonesia. We searched all publicly available guidelines, regulatory documents, government reports that included policies, strategy papers, reports, evaluation programs, as well as scientific articles and gray literature related to the incident reporting system relating to the three countries. The search terms applied in all cases were “incident reporting system,” “patient safety incident reporting,” and “reporting and learning system.” The search was limited to material published after 1999 and written in English.

We used the WHO components<sup>2</sup> as the framework for comparative analysis; the categories examined were the type of system, process, classification, and analysis. We added “learning” and “evaluation of the system.” The explanation of each category is provided in Table 1.

### Data Collection and Analysis

We extracted information from the literature and categorized it according to the WHO components of patient safety incident reporting system. We used a descriptive comparative analysis method to analyze the relevant documents. However, because the WHO Guidelines did not refer specify the system level, our analysis included both the national and hospital levels. We assumed that most of hospital internal reporting systems shared similar structures and mechanism because each country has provided the guidance

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**TABLE 1.** The WHO Components of Successful Patient Safety Incident Reporting System<sup>2</sup>

Components	Definition
Type of systems	Information whether the reports are mandatory or voluntary
Reporting process	Information regarding what is reported, who can report, and how the reports are submitted.
Classification of incident reported	The classification systems or taxonomies used by the system
Analysis of report	How the report was analyzed
Learning	Information about any learning and dissemination of learning
Evaluation of the system	Information whether any evaluation is established to evaluate the system

and basic framework for hospitals to develop their own internal reporting system.

## RESULTS

The comparisons of each WHO components of patient safety incident reporting system in three countries are presented in Table 2.

### Background of Each National Reporting System

The Taiwan Department of Health introduced the Taiwan Patient Safety Reporting (TPR) system in December 2003, although the service only began in January 2005.<sup>24</sup> The TPR system aims to integrate national data, analyze trends, and provide information regarding common and severe incidents to health care facilities.<sup>20</sup> The guiding principles of the reporting system are anonymity, voluntary reporting, confidentiality, and “learning together.”<sup>24</sup> Three methods were designed for online reporting, software upload, and data mapping. In the first year of its implementation, 77 institutions were enrolled and 1760 incidents were reported.<sup>24</sup> A total of 7032 facilities (including clinics) joined TPR system and approximately 489,768 events were reported between 2005 and 2016.<sup>15</sup>

The Malaysian Incident Reporting and Learning System has evolved since it was first established in 1999 as a quality assurance tool in Ministry of Health (MOH) hospitals.<sup>10</sup> The main aim of this system is to report patient safety incidents, investigate, improve, and share information to prevent similar incidents from recurring. Since 2015, an electronic or online e-Incident Reporting system (e-IR) has been used nationally to facilitate the process of reporting from each health care facility to the ministry. In 2018, the MOH introduced the Incident Reporting and Learning System 2.0 to further improve patient safety and to create a high reliability organization by creating a simpler form and shorter process, adopting an open concept of reporting, using the “Incident Reporting & Learning System Prescription Slip,” introducing root cause analysis (RCA<sup>2</sup>) and action and placing greater emphasis on more effective risk reduction strategies.<sup>10</sup>

The Indonesian MOH established the Patient Safety Incident Reporting System in 2006 to provide a mechanism for reporting incidents in circumstances or conditions that can cause harm to patients. According to Hospital Law No. 44, Year 2009, Article 43, incident reporting, along with incident analysis and recommended solution arising from an incident, was part of patient safety standards that should be implemented in hospitals to reduce the adverse events rate.<sup>25</sup> The implementation of incident reporting is directed and managed by the Hospital Patient Safety Committee (HPSC) or the National Committee (the Committee) that also analyzes the national data and shares learning at the national level. Despite being implemented for more than a decade, the trend of incidents reported has not shown a significant increase. Only 668 incidents were reported in 2016.<sup>26</sup> The number of incidents reported in the three systems is presented in Table 3.

### Types of Systems

The TPR system is a voluntary nationwide patient safety incident reporting system owned by the government and maintained by the Taiwan Joint Commission. As a learning system, all medical institutions are expected to report medical errors honestly and voluntarily without any sanctions so that all other institutions can learn from those sharing the experiences.<sup>6</sup>

Malaysia has a mandatory system that has an open concept of reporting in which all patient safety incidents, including near misses, need to be reported, and even when there is no incident, the hospitals still need to submit the report.<sup>9</sup> There were different categories of mandatory incidents that need to be reported by MOH facilities and private facilities.<sup>23</sup> Incidents were categorized into red cases (death or severe harm), yellow, and green cases. Other incidents were voluntary, such as near misses or hazards.

The implementation of the incident reporting system in hospitals in Indonesia, according to the Hospital Law, is mandatory.<sup>11</sup> The Indonesian reporting system is a “learning system,” as stipulated in step six of seven steps to patient safety, which requires learning and sharing within the unit in which the incident occurred or in a wider setting.<sup>12</sup>

### Process

In Taiwan, internal reporting allows anyone connected with a hospital to report patient safety incidents, which they have observed or in which they were involved.<sup>8</sup> Within 24 hours of an incident occurring, the staff have to complete a report.<sup>13</sup> For confidentiality, any identifications of patients or hospitals are removed before the data are stored. In the external reporting, hospitals must upload incident events or report to a national system regularly by the 15th of each month.<sup>7</sup>

Initially, the Malaysian Reporting and Learning System had three tiers of reporting included hospitals, respective State Health Departments (SHD), and MOH. State Health Departments sent a summary of the reports to the Patient Safety Unit at the Ministry level every 3 months; however, it was not timely.<sup>28</sup> Hence, it was difficult for the ministry to monitor and analyze the hospital incidents at the national level and take appropriate and timely action. The current e-IR uses the freely available online system to enable the risk or quality manager of each hospital to report directly to the ministry.<sup>10</sup> The IR Form 2.0 only comprises two sections and involves two persons, who are the reporter or witness and the hospital risk or quality manager, to complete the form within 48 hours. The risk or quality manager is required to report the incident to the MOH within five working days via the online system e-IR. This simpler and more user-friendly system improvement has led to a significant increase in the number of reports to 5689 in 2017.<sup>29</sup>

According to the Indonesian Patient Safety Incident Reporting Guidelines, an internal report is a paper-based report made either by staff who were involved in, or who observed an incident, or a staff member who established the occurrence of an incident, or by his or her supervisor, to the hospital patient safety team.<sup>14</sup>

**TABLE 2.** Comparisons of Each WHO Component of Successful Patient Safety Incident Reporting System in Three Countries

Components	Taiwan	Malaysia	Indonesia
The organization responsible for incident reporting	Joint Commission of Taiwan	Patient Safety Unit at Malaysia Ministry of Health	National Committee of Hospital Patient Safety
Type of systems	a. A voluntary system <sup>6-8</sup> b. A learning system <sup>6</sup>	a. A mandatory system <sup>9</sup> b. A learning system <sup>9,10</sup>	a. A mandatory system <sup>11</sup> b. A learning system <sup>12</sup>
Reporting process	a. Internal reporting With internal reporting, everyone in the hospital can report patient safety incidents that they observed or in which they were involved. <sup>8</sup> Within 24 h of an incident occurrence, the staff have to complete a report. <sup>13</sup> b. External reporting Hospitals must upload incident events or report to a national system regularly by the 15th day of each month. <sup>7</sup>	a. Internal reporting The current e-IR uses the freely available online system that the form only comprises two sections and involves two persons, who are the reporter or witness and the hospital risk or quality manager, to complete the form within 48 h. <sup>10</sup> b. External reporting The risk or quality manager then reports the incident to the MOH within 5 working days via the online system e-IR, while the RCA report needs to be submitted within 60 working days. <sup>10</sup>	a. Internal reporting An internal report is a paper-based report made either by staff who were involved in, or who observed, the incident, or a staff member who established the occurrence of an incident for the first time, or by his or her supervisor to the hospital patient safety team. <sup>14</sup> The internal reporting should be performed within 48 h of an incident occurring. <sup>14</sup> b. External reporting An external report is made from the hospital to the Committee either in written form or via the online reporting system available on the Web site. However, there is no reporting timeline described. <sup>14</sup>
Classification of incident reported	13 incident classification, including medication, falls, surgery, blood transfusion, health care, public accident, security, injury, tube, cardiac arrest, anesthesia, exam/inspection/pathological section, and others. <sup>8,15,16</sup>	The classification is based on the WHO's Conceptual Framework for the International Classification for Patient Safety, and the Government of Australia, Department of Health, Clinical Incident Management Toolkit, with some modifications.	13 incident types according to the WHO's international classification for patient safety. <sup>17</sup>
Analysis of report	a. Hospital level The information platform at hospital level can be used to audit and analyze incidents to determine the cause and to uncover systematic problems. <sup>8</sup> b. National level The system uses statistical analysis to establish a relationship between two variables and possible reasons for incidents that occur frequently. <sup>8</sup> The number of incidents reported were presented in Ministry Health and Welfare Web site. <sup>15</sup> Quarterly reports are generated from the reporting platform and were distributed to hospitals nationwide. <sup>8</sup>	a. Hospital level At the hospital level, the risk or quality manager reviews each incident report received and determines further action. The type of investigation depends on the patient outcome, which can either be a basic investigation, RCA <sup>2</sup> , failure mode effect analysis, and clinical audit among others. <sup>10</sup> b. National level Descriptive analysis can be performed to monitor trends, common types of incidents, and the incidents by location and time. <sup>10</sup> These, together with RCA reports received from health care facilities, are used as indicators for further discussion with respective disciplines on how to prevent the incidents. A national report is produced regularly every quarter, 6 mo, and annually. <sup>18</sup> These reports are uploaded in the Patient Safety Council Malaysia Web site for easy access.	a. Hospital level The analysis at the hospital level is conducted as a simple or comprehensive investigation using RCA. <sup>14</sup> b. At the national level, the Committee conducted a simple analysis by presenting the frequency and distribution of incidents, for instance, the number of incidents based on the type of hospital, province where the hospital was located, sex and age of the patients, incident location, and the reporter. <sup>19</sup>

(Continued next page)

TABLE 2. (Continued)

Components	Taiwan	Malaysia	Indonesia
Learning	<p>a. Hospital level The hospital investigating the incident to find its root cause, solving any problems found and proposing recommendations. Hospitals in Taiwan also submit accounts of incidents, submit reports on what has been learned, and propose improvements to the system.<sup>20,21</sup></p> <p>b. National level The Department of Health send immediate alert, the RCA for serious events, analyze the trend and risk, investigate the data systematically, and provide recommendations.<sup>7</sup> The alert and learning cases have been developed from cases of high severity or high frequency and from cases that TPR reviewers judged as being valuable for learning.<sup>8,20</sup> The alert and learning are fed back to healthcare institution through TPR Web site, patient safety Web site, and e-mail notification to participating institutions.<sup>20</sup></p>	<p>The learning component after an incident occurs at both the health care facility level and ministry level.<sup>10</sup></p> <p>a. At the facility level, the incident analysis findings are discussed in Patient Safety Committee Meetings chaired by the leaders. These findings are shared within the organization through training, continuous medical exam, staff briefings, or newsletters.</p> <p>b. At the National level, incident analysis findings are shared with health care staff during patient safety talks, courses, seminars, and workshops, in particular during the incident reporting and RCA course. The reports were regularly uploaded in the MOH Web site.<sup>10</sup></p>	<p>a. Hospital level Within hospitals, the hospital team's task was to determine the root cause of the incidents while also developing recommendations to improve the system.<sup>14</sup></p> <p>b. National level The Committee analyzes the incident reports from all hospitals and disseminates the results and solutions to the Provincial Health Office and to the Hospital Accreditation Commission at the regional level.<sup>12</sup> However, not much information is obtained about this process nor is any report available. In addition, the Committee Web site did not provide much information about the learning.<sup>19</sup></p>
Evaluation of the system	<p>As part of patient safety goals, the incident reporting system is assessed every year, and the improvement of each goal is reviewed.<sup>22</sup></p>	<p>The MOH Malaysia has advised health care facilities to systematically monitor and evaluate the implementation of incident reporting. The State Health Department also has to monitor and evaluate situations in health care facilities.<sup>23</sup> At the national level, evaluation is conducted for all MOH hospitals via e-IR, and at the macro level, it is conducted for all health care facilities in Malaysia through annual reporting via the Malaysian Patient Safety Goals that is reported via the “e-goals patient safety” online reporting system before the 31st of January each year.<sup>10</sup> The Malaysian MOH also takes the initiative in regularly improving the IR system on the basis of implementers' feedback.<sup>10</sup></p>	<p>No regulation or guidelines specifically mentioned evaluation of the patient safety incident reporting system. However, the evaluation of a patient safety program, in general, was clearly described in the national guidelines.<sup>12</sup></p>

The internal reporting should be performed within 48 hours of an incident occurring. An external report is made from the hospital to the Committee either in written form or online. Before sending the

report to the Committee, the hospital must analyze the causes of the incident and propose solutions and recommendations.<sup>14</sup> However, there is no reporting timeline prescribed in the guideline. Previous research also revealed the absence of external incident reporting timeline did not have a specified deadline that resulted in delay of reporting incident at the national level.<sup>30</sup>

TABLE 3. Number of Incidents Reported in Three Countries

Year	TPR <sup>27</sup>	Malaysia <sup>18</sup>	Indonesia <sup>26</sup>
2015	58,553	787 (July–December 2015)*	279
2016	56,562	2769	668

**Classification**

The Taiwan Joint Commission on Hospital Accreditation classifies 13 related-incidents events, including medication, falls, surgery,

blood transfusion, health care, public accident, security, injury, tube, cardiac arrest, anesthesia, exam/inspection/pathological section, and others.<sup>8,15,16</sup>

Within the Malaysian Reporting and Learning System, with the introduction of the IR System 2.0, incidents are classified according to “patient outcome” or harm incurred by the patient because of the incident. These include the following: no obvious harm, mild harm, moderate harm, severe harm, and death. The definition of classification is based on the WHO’s Conceptual Framework for the International Classification for Patient Safety and the Government of Australia, Department of Health, Clinical Incident Management Toolkit, with some modifications.

The Indonesian reporting system adopted the 13 incident types used for classification in the WHO’s international classification for patient safety.<sup>14</sup> The Indonesian reporting system included only patient behavior within the classification and added other types of incidents, such as patient falls and pathology or laboratory incidents, which were later categorized into subtypes of incidents.<sup>21</sup>

## Analysis

In TPR, the information platform at the hospital level can be used to audit and analyze incidents to determine the cause and to uncover systematic problems.<sup>8</sup> The analysis at the hospital level covered the statistical analysis and RCA on certain incident category.<sup>8</sup> The analysis of national data by the TPR system at the national level is almost similar and uses statistical analysis to establish a relationship between two variables and possible reasons for incidents that occur frequently.<sup>8</sup> For example, it was found that the most common type of medical incident was medication related, and the most frequent cause was human error. Furthermore, the TPR system analyses the time of incident occurrence to understand the particular times when incidents occur most frequently and the underlying reasons. However, it has been claimed that the original TPR system cannot determine sufficient causal factors of incidents or only covers superficial reasons that are related to active failures.<sup>6</sup>

Within Malaysian system, at the hospital level, the risk or quality manager reviews each incident report received and determines further action. The type of investigation depends on the patient outcome, which can either be a basic investigation, multi-incident RCA, RCA<sup>2</sup>, failure mode effect analysis, and clinical audit among others.<sup>10</sup> The RCA<sup>2</sup> is mandatory if the “patient outcome” is “severe harm” or “death” or if instructed by the SHD or patient safety unit of the MOH. At the national level, descriptive analysis can be performed to monitor trends, common types of incidents, and the incidents by location and time. These, together with RCA reports received from health care facilities, are used as indicators for further discussion with respective disciplines on how to prevent the incidents. A national report is produced regularly every quarter, 6 months, and annually.<sup>18</sup> These reports are uploaded in the Patient Safety Council Malaysia Web site for easy access. This Web site is very resourceful because some learning materials, such as patient safety presentations, incident reports, Malaysian Patient Safety Goals, training modules, guidelines, and references, are shared and can be downloaded by anyone.<sup>9,10,18,23</sup>

According to the Reporting Guidelines in the Indonesian system, the analysis at the hospital level is conducted as a simple or comprehensive investigation using RCA.<sup>14</sup> At the national level, the Committee conducts a simple analysis by presenting the number of incidents based on the type of hospital, province where the hospital is located, sex and age of the patients, incident location, and the reporter.<sup>19</sup>

## Learning

The learning component in the TPR system starts with the hospital investigating the incident to find its root cause, solving any

problems found, and proposing recommendations.<sup>8</sup> Hospitals in Taiwan also submit accounts of incidents, submit reports on what has been learned, and propose improvements to the system.<sup>20,21</sup> At the national level, the alert and learning cases have been developed from cases of high severity or high frequency and from cases that TPR reviewers judged as being valuable for learning.<sup>8,20</sup> Forty-two alerts and 18 learning cases were developed and distributed through several channels from 2005 to 2008.<sup>20</sup> The alerts and learning are fed back to health care institutions through the TPR Web site, the patient safety Web site, and by e-mail notification. These cases can be used for physician education workshops and/or published in annual reports and journals.

In Malaysia, the learning component after an incident occurs at both the health care facility level and ministry level.<sup>10</sup> At the facility level, the incident analysis findings are discussed in Patient Safety Committee Meetings chaired by the leaders. These findings are shared within the organization through training, continuous medical exam, staff briefings, or newsletters. At the ministry level, incident analysis findings are shared with health care staff during patient safety talks, courses, seminars, and workshops, in particular during the incident reporting and RCA course. The MOH Patient Safety Seminar in 2017 was conducted specifically on the Incident Reporting and Learning System.<sup>29</sup>

In Indonesian system, learning occurred at both the hospital and national levels. Within hospitals, the team’s task was to determine the root cause of the incidents while also developing recommendations to improve the system. The hospital team should also provide feedback and learning to the work unit where the incident took place. Regarding learning at the national level, the Committee analyzes the incident reports from all hospitals and disseminates the results and solutions to the Provincial Health Office and to the Hospital Accreditation Commission at the regional level.<sup>12</sup> However, not much information is obtained about this process nor is any report available. In addition, the Committee Web site did not provide much information about the learning.<sup>19</sup> Access to the Web site is restricted to hospitals that had obtained the code from the National Committee, whereas the publications about learning at the hospital or national level are not publicly available yet.

## Evaluation of the System

No information was available about the specific evaluation of the TPR system. However, on its Web site, the Joint Commission of Taiwan stated that as part of patient safety goals, the Incident Reporting System is assessed every year, and the improvement of each goal is reviewed.<sup>22</sup> Moreover, the goals are revised once every 2 years to make them consistent with practical implementation. However, unlike most quality improvement projects, Taiwan’s National Patient Safety Goals lack indicators that can be used to track the improvement.<sup>31</sup>

The MOH Malaysia has advised health care facilities to systematically monitor and evaluate the implementation of incident reporting.<sup>23</sup> If similar incidents occur at the facility, the Risk/Quality Manager and Patient Safety Committee has to determine the reasons and act accordingly. The State Health Department also has to monitor and evaluate situations in health care facilities. At the national level, evaluation is conducted closely throughout the year for all MOH hospitals via e-IR, and at the macro level, it is conducted for all health care facilities in Malaysia through annual reporting via the Malaysian Patient Safety Goals. The performance of the Malaysia Patient Safety Goals of each health care facility in Malaysia is reported via the “e-goals patient safety” online reporting system before the end of January each year.<sup>18</sup> The Malaysian MOH also takes the initiative in regularly improving the IR system on the basis of implementers’ feedback.<sup>10</sup>



No regulation or guidelines specifically mentioned evaluation of the patient safety incident reporting system in Indonesia. However, the evaluation of a patient safety program in general was clearly described in the national guidelines.<sup>12</sup> At the hospital level, the hospital leader monitors and evaluates patient safety programs on a regular basis, implements the hospital patient safety team periodically (maximum 2 y); evaluates the patient safety guidelines, policies, and procedures in hospitals, evaluates the activities trimonthly, and creates the follow-ups. At the national level, the National Committee conducts the monitoring and evaluation of guidelines at a maximum of every 2 years and monitors and evaluates the activities implemented by hospitals. An evaluation of the e-reporting trial in 40 hospitals was conducted in 2015.<sup>26</sup> However, no published available government report about the evaluation could be obtained.

## DISCUSSION

Various initiatives have been adopted by the government in each country, including leadership, establishing policies and guidelines, and creating reporting infrastructure for incident reporting in hospitals or other health facilities. We identified similarities, differences, and several issue with regard to the implementation of incident reporting in the three countries.

Some similarities were found regarding the type of the systems that were purposively created as a learning system. Other similarities were related to reporting process at the hospital level that needs to be completed by at least two people before sending reports to the external authority.<sup>8,10,14</sup> In addition, all of the internal systems set a specified timeline for submitting reports.<sup>10,13,14</sup> All systems used the internationally agreed classification developed by the WHO<sup>8,10,15–17</sup> and also had applied RCA to analyze the incident at the hospital level.<sup>8,10,14</sup>

We identified some crucial differences between Indonesia and the other countries. There was no timeline for external reporting in the Indonesian system. By contrast, both Malaysia and Taiwan had set a specific time limit for submitting external reports.<sup>7,10</sup> There are at least two implications from the absence of a timeline for external reporting in Indonesia. First, Indonesian hospitals may not give incident reports priority because there was no timeline in submitting the report to the external agency, because delays in completing the incident reports were identified as common problem in Indonesian hospitals.<sup>30</sup> Second, there might be a delay in analyzing the incident at the national level because the incident reported may be several months old, thus also delaying feedback from national level.

There were also differences in data analysis and learning at the national level, which showed that Malaysia and Taiwan had transformed the incident reports into a source of learning, providing feedback to the reporter and disseminating the learning through official Web sites.<sup>10,20,21</sup> In addition, these countries had optimized the use of classification, especially for data analysis and learning purposes. Because reporting is only of value if it leads to a constructive response and meaningful analysis,<sup>2</sup> effective analysis is, therefore, the critical component of a patient safety incident reporting system.<sup>2</sup> Taiwan Patient Safety Reporting has reported the number of alerts and learning cases produced in a certain year.<sup>7,15</sup> The MOH Malaysia Incident Reporting Guidelines has clearly directed the health facilities to develop risk reduction strategies<sup>10</sup>; however, this issue has not been emphasized in the Indonesian system.

Another issue was related to the transparency, public access on the incident report data, and its related learning, especially in Indonesian system. Most of the information about the Malaysian system and all manuals and reports were easily accessed from the Patient Safety Council of Malaysia Web site.<sup>9</sup> Similarly, the TPR updated incident reports were available in Chinese and English and could be downloaded from the Ministry of Health and

Welfare Web site.<sup>15</sup> In contrast, despite being implemented for more than a decade, the performance of the Indonesian reporting system is difficult to establish. In terms of openness and transparency, the Indonesian system lagged behind the systems in the two other countries.

Lastly, although all three countries are committed to building a good reporting system, the question of how one evaluates the system remains unclear. Within the TPR, incident reporting is included in the Taiwan Annual Patient Safety Goals, which are evaluated yearly.<sup>22</sup> From the reports and presentation in the Patient Safety Council of Malaysia Web site, we learned that evaluation of the system is performed and some changes have been made; for example, the previous reporting process was complicated, untimely, incomplete, and labor intensive,<sup>32</sup> but then, the reporting process was simplified by reducing the incident form from one to two pages, and only two individuals instead of four fill in the reporting form.<sup>32</sup> However, clear and structured evaluations about incident reporting were not found in either country. In the Indonesian system, information about the evaluation of incident reporting was not available in the guidelines. Thus, whether the system has been evaluated during its implementation is questionable, but if we look further at how the system has performed, evaluation of the whole system seems to be crucial.

## Contextual Explanations for Variations Between Countries

In terms of the system achievement or good practice, TPR has been shown to be a well-established system with a substantial number of incidents reported every year. Meanwhile, the Malaysian e-IR system is still in its infancy because the newly established e-reporting system was only installed in 2015; however, the number of cases reported in the first year far exceeded the number of incidents reported in the Indonesian system after a decade of its operation. It can be argued that the countries comparison was not equal because the size of the countries was not comparable. Taiwan country size is equal to state-based or provincial-level reporting instead of national reporting system<sup>7</sup>; however, all countries faced similar barriers in reporting incident, such as fear of disciplinary action or punishment, fear of being blamed, or being recognized as incompetent<sup>33–38</sup>; hence, the comparison is useful for identifying areas of improvement.

## Study Limitations

A language barrier was encountered in researching Taiwan because the search for documents was limited to those in English. This limitation probably resulted in not collecting all of the relevant documents. However, we have worked with Taiwanese contributor who had addressed this issue ideally by providing insights and knowledge of the country's reporting system.

## CONCLUSIONS

The TPR and Malaysian Reporting and Learning System had similar attributes and most closely followed the WHO components of incident reporting system. Comparing the incident reporting systems using the WHO components of incident reporting system could identify the areas for improvement. Because we had identified in this study; compared with the TPR and Malaysian system, the Indonesian patient safety incident reporting system seemed to be ineffective because it failed to acquire reasonable national incident reporting data or to allow learning at the national level. We suggest further research on the implementation at the hospital level to see how far the national guidelines or policy has been implemented in each country.

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KOMISI ETIK PENELITIAN KESEHATAN  
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FAKULTAS KEPERAWATAN UNIVERSITAS AIRLANGGA  
FACULTY OF NURSING UNIVERSITAS AIRLANGGA

**KETERANGAN LOLOS KAJI ETIK**  
*DESCRIPTION OF ETHICAL APPROVAL*

**“ETHICAL APPROVAL”**

No : 2124-KEPK

Komite Etik Penelitian Kesehatan Fakultas Keperawatan Universitas Airlangga dalam upaya melindungi hak asasi dan kesejahteraan subyek penelitian kesehatan, telah mengkaji dengan teliti protokol berjudul :

*The Committee of Ethical Approval in the Faculty of Nursing Universitas Airlangga, with regards of the protection of Human Rights and welfare in health research, carefully reviewed the research protocol entitled :*

**“ANALISIS KAPASITAS RUMAH SAKIT, MANAJEMEN KESIAPSIAGAAN  
RUMAH SAKIT DAN KESELAMATAN PASIEN SELAMA PANDEMI COVID-19:  
PERSPEKTIF TENAGA KESEHATAN”**

Peneliti utama : **Inge Dhamanti**  
*Principal Investigator*  
Nama Institusi : Universitas Airlangga  
*Name of the Institution*  
Unit/Lembaga/Tempat Penelitian : Online, di seluruh Indonesia, Malaysia dan Thailand  
*Setting of research*

**Dan telah menyetujui protokol tersebut di atas melalui Dipercepat.**  
*And approved the above-mentioned protocol with Expedited.*



Surabaya, 27 Oktober 2020  
Ketua, (CHAIRMAN)

**Dr. Joni Haryanto, S.Kp., M.Si.**  
NIP. 1963 0608 1991 03 1002

**\*Masa berlaku 1 tahun**  
*1 year validity period*