

PalArch's Journal of Archaeology
of Egypt / Egyptology

**FACTORS INFLUENCING NURSING STAFF TO GENERATE
INCIDENT REPORTS IN MAFRAQ HOSPITAL, ABU DHABI, UAE**

Ms. Nadia Tatum, RN¹, Mr. Sravan Kumar²

¹Staff Nurse, Al Mafraq Hospital, Abu Dhabi UAE.

**²Research Scholar, Lovely Professional University (LPU), Punjab
Deputy Director Quality, ZulekhaHealthcare Group, UAE.**

**Ms. Nadia Tatum, RN , Mr. Sravan Kumar, Factors Influencing Nursing Staff To
Generate Incident Reports In Mafraq Hospital, Abu Dhabi, Uae , Palarch's Journal
Of Archaeology Of Egypt/Egyptology 18(4). ISSN 1567-214x.**

**Keywords: Incident reports, Nursing Staff, Patient Safety, Risk Management,
Perceptions.**

ABSTRACT:

Generation of incident reports or occurrence variance reports helps healthcare organizations to identify the opportunities for improvement and improve their processes & systems before a substantial injury / mortality / loss happens to the people & organization. Undoubtedly, nursing staff are the top most in reporting of incidents in healthcare organizations and hence it would be interesting to find the factors which influence them to report incidents at workplace. This study was intended to know what influences nurses to report or not report incident reports, identify solutions that can be implemented to improve reporting among nurses and thus find more opportunities for improvement for ensuring patient safety. A cross-sectional study was done using a questionnaire to learn the factors influencing nursing staff to report incidents. The study was conducted at Al Mafraq hospital and cross sectional survey data collected in the months of Nov 2018 to Jan 2019. The questionnaire was sent to 1200 nurses from and 355 of them responded (29.5%). The 1st section of the questionnaire had demographics captured, 2nd section had 11 questions factors promoting incident reporting and 3rd section had 9 questions capturing factors preventing staff from reporting incidents. All the questions used 5 point Likert scale (Strongly Agree, Agree, Neutral,

Disagree and strongly disagree). Additionally, data of Incident reports generated by nurses from Oct 2017 to Sep 2018 was also analyzed.

Several factors that prevent nurses from reporting incidents, including lack of time as staffs were busy with their nursing assignments and duties which prevented them from filling long incident report form, fear of bullying among new staff which resulted from absence of bullying policy, lack of involvement of the reporting staff into the response process to handle the incident and no feedback is shared from the quality department about the actions that were taken. Participants suggested the following to improve reporting, need for simple and user friendly reporting form and system for incidents and involvement of nurses in decision making and solving the incident throughout all steps of the process. Incident reporting can improve patient safety significantly by reducing recurrence of events and nurses are major contributors to incident reporting. However, this can be achieved only by making the incident reporting process and form simple, involving staff in the process of review of incident reports and providing feedback to staff after generation.

1. INTRODUCTION:

There is no one accepted definition of an “Incident”, different organizations use different definitions. Whatever the definition of an incident is, incident reports implementation helps to prioritize patient safety as patient safety is being discussed and prioritized in meetings, the advantages of the incident reports makes it a permanent existence in hospitals, if managed well, incident reports does bring in effective changes in patient safety in the organizations (Carlfjord et al, 2018). The objective of this reporting is to identify hazards related to safety for patients, staff & visitors and develop solutions to reduce the harm, eliminate the hazards and improve the safety (Carlfjord et al, 2018).

The intention of this paper is to identify the possible reasons/factors that might encourage nursing staff to report any incidents happened or about to happen (near misses) and what factors prevent them from reporting. This can help by reinforcing those motivating factors to enhance reporting incidents and eliminate or reduce the factors preventing staff from reporting by identifying and implementing action plans.

1. METHODS:

1.1 Design and Sample:

A self-understanding cross sectional survey was conducted among the Nurses of Al Mafraq Hospital. After obtaining approval of the Human Research Ethics Committees (HREC) of Mafraq Hospital, the questionnaire was sent to 1200 nurses. A convenience sampling methodology was used and disseminated the questionnaire to all nursing staff in Mafraq hospital, which were 1200 nursing staffs including junior, seniors and nursing management. The survey was conducted online using monkey survey and the name of the responded was kept option to make the survey anonymous and unbiased. The survey was run for 30 days and then extended to 3 months to achieve the desired sample size of 250. After removing the incompletely filled responses, we received a total of 355 responses (29.5%) which was used for the final data analysis.

1.1 Measures:

A self-administered, structured questionnaire was developed. The 1st section i.e. Section A, the participant was asked about his/her social profile. It includes the name with (optional) to secure anonymous to whom wishes, grade (registered nurse, a practical nurse, a charge nurses or other to specify), department of work (Medical, Critical Care, Labor & Delivery, Surgical, OR & RR, Emergency Room, Outpatient clinics or other to specify). We asked also about the duration of work at Mafraq hospital with the current grade (1 to 5 years, 5 to 10 years or other to specify). The last question in this section is about whether the participant had ever generated an incident report? If yes chose how many times, 1 to 5 times, 6 to 10 times or more than 10 times.

In the 2nd section i.e., section B, the respondent was asked about the factors that are encouraging him/her to report incidents. The answer will be chosen from a list of choices with the uses of a 5 point likert scale (as above) and choose the response that most closely reflects the participant's beliefs among the given list of possible factors (Just culture or Blame free culture, Incident reports result in process / system improvements, Quick resolution time, Transparency in managing incident reports, Feedback about the corrective or preventive action taken is communicated , Incident report system is easy to use, Management provide support and encouragement to report incidents, Confidence in Quality Department, Rewarding system (the more you report incidents you will be rewarded), I am legally protected and Confidentiality & Security of the reporting system and others).

In the 3rd section i.e., Section C, staff was asked to choose and rank the factors discouraging them to report incidents. Ranking of the factors was given from 1-9 as 1 is most important and 9 is least important that would prevent the respondent from reporting incidents. These factors include Fear of peer blame, Fear of manager blame, Fear of termination, Fear of losing license, Fear of possible impact on performance appraisal, Lack of feedback from previously reported incidents, Workload/lack of time, Complexity of reporting system, Lack of knowledge about incidents reporting policy.

Towards the finish of the survey questionnaire, a field for giving any other feedback or comments that the respondent might would like to provide about the topics in this survey is included as free text option.

Seven Nursing staff and leaders (Director of Nursing, Assistant director of Nursing, ward Incharges and staff nurses) reviewed the questionnaire to assess the face validity. After reviewing the feedback received from them, some of the questionnaire items were removed and edited, the factors preventing staff from reporting were changed from likert scale to ranking to learn the strongest factor and which is the weakest furthermore, a few things were reworded for lucidity. Post which, the questionnaire was tested with a small group of ten nurses who were not included in the sample of the study. The respondents could understand the question items very well and did not have any difficulty. The questionnaire was then sent to all nurses for their responses.

In addition, we also looked at the total incident reports generated and detailed types of incidents reported at Mafraq Hospital during the period between the fourth quarter of the year 2017 till the third quarter of the year 2018. This was to learn the percentage of incidents reports generated by nurses and the most common type of incidents reported.

1.1 Data Analysis:

Descriptive statistics and correlation analyses were conducted using SPSS software version 22.0 characteristics. Pearson Chi-square test was done to check the correlation between the factors influencing staff to report incidents and duration of work at Mafraq Hospital. Frequencies were used to identify the factors preventing staff from reporting based on the ranking.

2. RESULTS:

Top 5 incidents reported during each quarter:

Quarter 3, 2018: During the third quartet of the year of 2018, the top five types of incidents which were identified and reported are as following;

1. Medication related incident which was due to dispensing issue: the incident identified was the delay in delivery of medication.
2. Laboratory test related incident which was due to Specimen related quality and other specimen collection work flow related issues.
3. Care Coordination and Communication related incident which was due to the lack of monitored bed in CICU which lead to patients being placed on telemetry bed instead.
4. Medical records / patient identification related incident which was due to incomplete entry of patient information in Malaffi system during registration.
5. Transfusion identification related incident which was due to Transfusion Incidents which consists of duplication of Orders.

Quarter 2, 2018: During the second quartet of the year of 2018, the top five types of incidents which were identified and reported are as following;

1. Laboratory test related incident which was due to specimen related quality and other specimen collection related identified issues
2. Medication related incident which was due to wrong dose dispensed.
3. Care Coordination Communication related incident which was due to non-availability of enough beds in the hospital to meet the volume of patients who required admission.
4. Medical records / patient identification related incident which was due to incomplete entry of patient information in malaffi system during registration
5. Other miscellaneous related incident which was due to analysis of the reported cases of 'Left Against Medical Advice's indicate that there was no hospital induced reasons to leave

Quarter 1, 2018: During the first quartet of the year of 2018, the top five types of incidents which were identified and reported are as following;

1. Laboratory test related incident which was due to encountered difficulty in blood extraction, during transport of the specimen, issue related as well to human error involved during the entry of lab results to patient's file
2. Care Coordination Communication related incident which was due to non-availability of needed number of beds in the hospital to meet the volume of patients seeking admission.
3. Medication related incident which was due to prescribing errors, related to medication preparation process errors, related to dispensing flow errors, related to storage process errors

4. Skin integrity related incident which was due to occurrence of hospital acquired skin breakdown due to patient's specific disease condition and other simultaneous comorbidities. There was a noticed high volume of patients who were admitted in the hospital appeared to have come with community acquired pressure injuries.
5. Medical records / patient identification related incident which was due to incomplete entry of patient information in malaffi system during registration process. Other medical records/documentation related incidents were as well notified.

Quarter 4, 2017: During the fourth quarter of the year of 2017, the top five types of incidents which were identified and reported are as following;

1. Care coordination and communication related incident which was due to access to care problem.
2. Medication related incident which was sited under section of other medication events
3. Skin Integrity related incident which was due to occurrence of pressure ulcer
4. Medical record related incident which was due to patient identification incomplete, due to incorrect chart entry and order entry information related issue.
5. Complications of care (unanticipated, non-surgical) related incident which was due to post IV site insertion complication occurrence.

In summary, the 3 common incidents found in the top 5 incidents of last 4 quarters were Lab test related, medication related incidents and medical record related incidents, which means that many incidents were recurring due to ineffective solutions or no solutions implemented.

The total number of respondents we were able to get responses from, and who submitted the survey is 355 respondents. Their nursing related profile ranged between 85.35% Registered Nurses, about 6.48% are Charge Nurses, while 4.51% of them are Practical Nurses and only 3.66% of the respondents have chosen the option of others. With regard to the department of work, the profiles are as follow; a total of 26.76% of respondents are working in critical care, whereas 21.13% are working in medical department, a percentage of 18.03% are working in surgical department, whilst a percentage of 10.49% claim being working in other departments than the ones included in the choice list. Moreover, 9.01% of the staff respondents are working in Out Patient Department, where 7.04% are working in Operating Room and Resuscitation and Rehabilitation department, other 4.23% are working in Emergency department, a percentage of 3.38% are working in labor and delivery services. Furthermore, concerning the duration of work at Mafraq hospital, a percentage of 60.28% from the respondents cited that they have been working in Mafraq hospital for one (1) to five (5) years, other 20.85% of them have been working at the Mafraq hospital for six (6) to ten (10) years and only 18.87% of them were working in Mafraq hospital for more than ten (10) years. Regarding the percentage of generated an incident, responses came out as follow; a total of 67.04% reported that they have generated incidents during the last year, and a percentage of 32.96% reported that they did not report any incident since they have joined the hospital. Regarding the percentage of how frequent a staff had reported an incident, a percentage of 91.83% of them answered that they have generated more than one (1) to five (5) times an incident, whereas 4.79% reported having reported and generated incidents for six (6) to ten (10) times, and a portion of 3.38% have reported that they have issued incident reports for more than ten (10) times during their period of work.

In the following paragraphs, we will present the survey results and responses for each section of the questions;

Responses on first section asking about the factors encouraging nursing staff to generate incident reports:

The top 5 factors which encourage staff to report incidents were found to be incident reports result in improvements, management provide support and encouragement to report, incident reports system ease of use, confidence in the quality department and confidentiality and security of the reporting systems. The factors which had least agreement of the staff in encouraging them to report i.e., factors which were not encouraging include rewarding system, blame free culture and legal protection. See table 1 - Responses of staff related to factors encouraging generating incident reports.

Hypothesis testing - A:

H0 - Factors encouraging nursing staff to report Incidents are same irrespective of experience

H1 - Factors encouraging nursing staff to report Incidents are different based on experience

Results do not show statistically significant association between work Duration and factors encouraging nursing staff to generate incident reports i.e., factors to generate incident reports are same for less and more experienced nursing staff. As, for none of the factors encouraging, the p-value for association between different durations of work experience (1-5 years and 5-10 years) was more than 0.05, hence the null hypothesis i.e., factors encouraging Staff to Report Incident reports are same irrespective of experience is accepted. See table 2 – Relationship of factors encouraging reporting incidents with duration of work (1-5 years and 6-10 years).

Responses on second section asking about the factors preventing nursing staff to generate incident reports:

The top 5 factors which prevented staff from reporting incidents include Lack of knowledge about incidents reporting policy, Fear of peer blame, Lack of feedback from previously reported incidents, Complexity of reporting system and Fear of termination. However, majority of the participants i.e., 45.5% of the respondents said that “lack of knowledge about incidents reporting policy” is one of the major factors contributing to lack of reporting of incidents. See table 3 - Factors that prevent/stop you from reporting incidents (Rank from 1 to 9, 1 as most important and 9 as least important).

Hypothesis testing:

H0 - Factors preventing nursing staff to report incidents are same irrespective of experience

H1 - Factors preventing nursing staff to report incidents are different based on experience

We do not have enough evidence to say that there is a significant difference in both nursing staff groups (i.e., staffs with 1-5 years and 6-10 years of experience) regarding some of the factors preventing nursing staff from reporting incidents such as Fear of peer blame, Fear of manager blame, Fear of losing license, Lack of feedback from previously reported incidents, Workload/lack of time and Lack of knowledge about incidents reporting policy. However, "Fear of Termination" is found to have a significant difference with less experience (1-5 years) fear more, "Fear of possible impact on performance appraisal" is found to have a significant

difference with less experienced staff fear more and "Complexity of reporting system" is found to have a significant difference with more experienced staff ranks top. See table 4 – Relationship of factors preventing staff from reporting incidents with experience.

Other feedback: factors preventing nurses from reporting incidents as per described by the respondents: The staff have also mentioned few comments which included lack of time for reporting incidents as they are busy in providing patient care, we report only those which we feel are important as it requires staying back after duty; There is no policy that regulates the bullying especially for new joining staff; lack of giving feedback on the incident to the staff who have reported the incident, lack of actions taken towards any incident reported, blame from peers or managers also a reason for non-reporting; there should be a proper reporting of the incident by providing appropriate training, focus and time to fill in the report forms and rechecking it before submission; appointing multi-cultural staff in quality dept. will avoid the possibility of bias against staff; increased work load leads to more incidents and hence it is important to be more open minded to accept notices and provide support to everyone as no one is perfect but can be better with proper guidance and support; Reporting incidents often causes more harm to the person who reported the incident than good; move from complex reporting system to a more user-friendly reporting system which should take less time for reporting; involve the nurses in finding corrective actions for incidents; there is a strong need to avoid unnecessary reports, which are generated by pharmacy and lab; And, Patient safety net (PSN) for medication related issues is complex to report especially if we have miss doses of medicine and we want to write PSN about pharmacy. It is quite complex and require training, assistance, revision and assistance.

Discussion:

Incident reporting system (IRS) is a very important to improve patient safety and enhance nurses learning. An effective incident reporting system improves patient safety and allows nurses to report an incident with an assurance that their report will be accepted in a non-punitive manner, so their learning capacity will be enhanced regarding the causation of the incident which will prevent it from recurring. Some of the studies showed that many incidents are not reported by nurses for many reasons (Pfeiffer et al, 2010).

A Qualitative study done with four focus groups to identify perceptions of senior nurses' on the incident reporting practices of junior nurses and reported that the senior nurses' view about incident reporting is different from junior nurses and they felt that junior nurses are using incident reporting system to vent frustration. Although junior nurses report incidents, these were downplayed by the senior nurses. It suggested that senior nurses must create a positive culture to identify risks to improve patient safety which eventually will create positive work environment (Atwal et al, 2020). A focus group study done in China among nursing interns on incident reporting, concluded that there were no criteria established for reporting incidents, while most serious events that hurt patients / staff were reported, but events which are minor and did not involve any injury were not reported as staff felt that reporting these events is considered meaningless. The study also mentioned that interns suggested introducing chat rooms or online chat to improve reporting and sharing of knowledge on nursing safety (Song & Guo, 2019). Some of the factors which limit the physicians and nurses from reporting of medical errors voluntarily are worriedness of the staff, medico-legal consequences, fear of being considered as

incompetent, pressures related to work and under staffing. Shifting the organization focus from productivity to safety will help in avoiding medical errors and improving patient safety (Ayman M. Abu Mustafa et.al, 2019). A study of review of the China National Patient Safety Incidents Reporting System reported that majority of the incidents reported involved nurses, followed by physician and then medical technologists. The common incidents reported involved drug related, followed by nursing care, surgery related incidents and the least being anesthesia related events. The reporting of incidents has seen a significant improvement in 2016 and 2017 (Gao et al, 2019). A study done in the long term indicated that open work environment culture and just culture of safety promote incident reporting among staff while fear of punishment serves as a barrier for reporting. The study also suggested that staff training & education, rewarding staff for generating incidents and providing emotional interventions will overcome this barrier of fear (Lin et al, 2019). A scale which assessed the psychometric validity and reliability of the questionnaire used for incident reporting culture showed for nurses in Taiwan to report incidents, it is most important to have a culture where staff are not punished for errors, good relations with co-workers and inter –professional collaboration with other colleagues (Chiang et al, 2019).

A study done in Palestine, reported that perceived barriers to incident reporting were fear of blame, no structure for reporting, punitive blame and administrative sanctions. Also, this study suggested that physicians are more likely to report incidents than nurses which is contradicting with other studies reported. Motivators for reporting were identified to be ethical responsibility, learning from mistakes and getting help from patients (Rashed and Hamdan, 2019). Nurses know to identify medication errors, but are reluctant to report as they are hesitant of the consequences of reporting such as “they may be seen as incompetent by colleagues and punishment by managers”. Where it was reported, it was only serious medication errors and most often they are reported only to physicians (Dirik et al, 2018). Nurses are seen to be reporting more incident reports compared to the physicians. One of the primary reasons identified for underreporting of incidents that the staff did not see incident reporting as an effective tool to improve patient safety because they felt their concern is not addressed and repeated incidents were noted for which an incident report was already generated (Bovis et al, 2018).

In Sweden, of the total incidents reported (65749) in the incident reporting system, 165 of these incidents resulted in injuries and required treatment was required for the 16% of the injuries and mostly it was nurses and nursing assistants who reported the incidents in the incident reporting system (C.Wahlin et al, 2019). One of the retrospective studies done in Finland of all the incidents reports, only 4% and 2% resulted in recommendations in 2013 and 2014 & 2015 respectively which is a very negligible percentage undermining the effectiveness of the incident reports. One of the common reasons reported for no recommendations as managers did not give any response to prevent the recurrence of the incident as these were still pending analysis (Liukka et al, 2018).

Medication errors in Newborns reported by staff using incident reports were only 2 while the medication errors identified by the clinical pharmacists through chart review/observation were 383, thus signifying gross underreporting of incidents by staff (Palmero et al, 2018). Of the total incidents related to safety detected by the physicians through screening in the medical records, only 37% were reported by the staff through adverse event reporting systems, the most common incidents reported among these included falls, assaults and elopements (Reilly et al, 2018).

Incident reporting if not implemented properly will not lead to improvement rather leads to development of a blame culture and if implemented appropriately, can lead to learning and improvements (Flott et al, 2018). Introducing an Electronic system for reporting OVRs significantly improved the processing time (from 120 to 20mins) and improved efficiency for analyzing and tracking incident reports or OVRs. Also, significantly improved the risk management system of the organization (Brondial S, 2019).

It was found that the introduction of a reward system, recruitment of more staff for incident management, enhancement of hospital safety culture and training opportunities are very important in encouraging nurses to report incidents (Hwang, et al, 2012). An anonymous survey revealed that 75% of anesthesiologists in Australia agreed or strongly agreed that feedback, role models, legislated protection, ability to report anonymously, and clear guidelines are effective ways to improve incidents reporting (Heard et al, 2012). Other factors were found to increase reporting were the confidentiality and security of the reporting process to prevent access to information by unauthorized personnel in order to overcome the lack of legal privilege afforded to the reporting process.

To overcome the culture of blame and enhance reporting, management should encourage the option to report anonymously to an independent body, without fear of being identified and with the option to omit identifiers of either self and/or organization. Knowing all aspects of patients in the unit, the plan of care, and referring to critical care policies and procedures, hospital accreditation is another reported examples of effective strategies to identify or correct errors (Henneman et al, 2010).

CONCLUSIONS AND RECOMMENDATIONS:

It is correct to say that that reporting incident is crucial in healthcare facilities as it has direct reflection of patient safety related issue. However, by enhancing reporting incidents among healthcare professionals, nurses are not only ensuring continuous quality and safe care, but also they are creating an official record data base of incidents, of which the details can be recalled and referred to in the future for future study and quality improvement projects. Also, this provides an immediate opportunity for the healthcare organizations to prevent the recurrence of an event. Furthermore, analyzing the reported previous incidents enables to learn from events, develop and improve services, and identify training needs. All healthcare professionals believe that they should report most, if not, all incidents, but nurses do so more frequently than all other health workers as they are the frontline, in regular contact and interaction with patients, so more exposed to committing errors and witness incidents. In order to improve incident reporting and engage staff to do so, especially among nurses, all staff must be made aware of the incident report policy, clarification and reminding is needed of which types of incidents are to be reported, the process of reporting requires to be more simplified, and feedback should be shared with all staff in all department regardless if they reported incidents or not. Incident reporting is a powerful tool which helps in initiating and maintaining risk awareness in healthcare practice. Improving the use of incident reports systems in healthcare is tough and this paper has helped in bringing prominence to the factors involved and contributing to generate reports by nursing staff. It highlighted as well the factors preventing nurses from doing so.

Incident reporting processes at healthcare organisations are commonly challenged by organisational culture, communications and staffing barriers. In our study, our participants have reported that the most common factor that is preventing them from reporting the incidents “lack of knowledge of incident reporting policy”, fear of peer blame, lack of feedback to staff on incidents generated and complexity of termination. Due to high workload, lack of time is also cited as a reason not to report incidents. Some of the solutions which can be implemented by the hospital include creating awareness among the staff (both more and less experienced staffs) on the incident report policy and making it clear which incidents require reporting and which do not, encouraging just culture thus making staff aware that no one would be blamed, fear of peer blame is removed. Involving nursing staff in identification of solutions for incidents generated and providing them prompt feedback on the incidents reported will help in making the nursing staff involved in the process and also learn the kind of positive changes or improvements resulting from incident reports. Finally, making the incident reporting process and reporting tool simpler so that it does not take much time and encourage to staff to report incidents. If well used, the incident reporting system helps healthcare organisations to transform incident management from a reactive response into a proactive management plan, which contributes to enhancing patient safety and sustain desired quality of patient care.

Limitation: The limitation of this study search is that we could not retrieve from the data the incidents that were self-reported from those reported by other staff against others. But after discussion with the quality and risk management, most of the incidents are normally self-reported. Another limitation is that the most responses were from the inpatient departments in comparison of outpatient clinics where several incidents are generated.

Acknowledgement: We would like to thank DrAsmaDeeb, Ms.Samah Mohamed Mahmoud and The Research Ethics Committee of Mafraq Hospitals for their support in carrying out this research at Mafraq Hospital. We would like to thank Mr. Remees Raj for helping with the statistical analysis.

Funding: No funding was received from any organization by the authors for conducting this study.

REFERENCES:

1. AbuMustafa, D. A. M., &Jaber, M. (2019). Factor affecting Medical errors Reporting among medical team in Pediatric Hospitals in Gaza governorate. *Journal of Medical Research and Health Sciences*, 2(11), 794-801. <https://doi.org/10.15520/jmrhs.v2i11.131>
2. Atwal, A, Phillip, M, Moorley, C. Senior nurses’ perceptions of junior nurses’ incident reporting: A qualitative study. *J NursManag.* 2020; 00: 1– 8. <https://doi.org/10.1111/jonm.13063>
3. Bovis, J. L., Edwin, J. P., Bano, C. P., Tyraskis, A., Baskaran, D., &Karuppaiah, K. (2018). Barriers to staff reporting adverse incidents in NHS hospitals. *Future healthcare journal*, 5(2), 117–120. <https://doi.org/10.7861/futurehosp.5-2-117>
4. Brondial S, Alhasani A, Elfaiomy MA, Radwan MA, (2019) 56 Electronic occurrence variance reports (eOVR) management system. *BMJ Open Quality*2019;8:doi: 10.1136/bmj-oq-2019-PSF.56
5. Carlfjord, S., Öhrn, A., &Gunnarsson, A. (2018). Experiences from ten years of incident reporting in health care: a qualitative study among department managers and coordinators. *BMC Health Services Research*, 18(1). doi:10.1186/s12913-018-2876-5

6. Charlotte Wåhlin, Susanne Kvarnström, Annica Öhrn & Emma Nilsson-Strid (2020) Patient and healthcare worker safety risks and injuries. Learning from incident reporting, *European Journal of Physiotherapy*, 22:1, 44-50, DOI: 10.1080/21679169.2018.1549594
7. Chiang, H.-Y., Lee, H.-F., Lin, S.-Y., & Ma, S.-C. (2019). Factors contributing to voluntariness of incident reporting among hospital nurses. *Journal of Nursing Management*. doi:10.1111/jonm.12744
8. Dirik, HF, Samur, M, SerenIntepeler, S, Hewison, A. Nurses' identification and reporting of medication errors. *J ClinNurs*. 2019; 28: 931–938. <https://doi.org/10.1111/jocn.14716>
9. Flott, K., Nelson, D., Moorcroft, T., Mayer, E. K., Gage, W., Redhead, J., & Darzi, A. W. (2018). Enhancing Safety Culture Through Improved Incident Reporting: A Case Study In Translational Research. *Health Affairs*, 37(11), 1797–1804. doi:10.1377/hlthaff.2018.0706
10. Gao, X., Yan, S., Wu, W., Zhang, R., Lu, Y., & Xiao, S. (2019). Implications from China patient safety incidents reporting system. *Therapeutics and Clinical Risk Management*, Volume 15, 259–267. doi:10.2147/tcrm.s190117
11. Heard, Gaylene C. MBBS, FANZCA, MHumanFact*; Sanderson, Penelope M. PhD, FASSA†; Thomas, Rowan D. MBBS, FANZCA, MPH* Barriers to Adverse Event and Error Reporting in Anesthesia, *Anesthesia & Analgesia*: March 2012 - Volume 114 - Issue 3 - p 604-614 doi: 10.1213/ANE.0b013e31822649e8
12. Henneman, E. A., Gawlinski, A., Blank, F. S., Henneman, P. L., Jordan, D., & McKenzie, J. B. (2010). Strategies Used by Critical Care Nurses to Identify, Interrupt, and Correct Medical Errors. *American Journal of Critical Care*, 19(6), 500–509. doi:10.4037/ajcc2010167
13. Hwang, J.-I., Lee, S.-I., & Park, H.-A. (2012). Barriers to the Operation of Patient Safety Incident Reporting Systems in Korean General Hospitals. *Healthcare Informatics Research*, 18(4), 279. doi:10.4258/hir.2012.18.4.279
14. Liukka M, Hupli M, Turunen H. Problems with incident reporting: Reports lead rarely to recommendations. *J ClinNurs*. 2019;28:1607–1613. <https://doi.org/10.1111/jocn.14765>
15. Palmero, D., Di Paolo, E.R., Stadelmann, C. et al. Incident reports versus direct observation to identify medication errors and risk factors in hospitalised newborns. *Eur J Pediatr* 178, 259–266 (2019). <https://doi.org/10.1007/s00431-018-3294-8>
16. Pfeiffer, Y., Manser, T., & Wehner, T. (2010). Conceptualising barriers to incident reporting: a psychological framework. *BMJ Quality & Safety*, 19(6), e60–e60. doi:10.1136/qshc.2008.030445
17. Rashed, Anan MPH*; Hamdan, Motasem PhD† Physicians' and Nurses' Perceptions of and Attitudes Toward Incident Reporting in Palestinian Hospitals, *Journal of Patient Safety*: September 2019 - Volume 15 - Issue 3 - p 212-217 doi: 10.1097/PTS.0000000000000218
18. Reilly, C. A., Cullen, S. W., Watts, B. V., Mills, P. D., Paull, D. E., & Marcus, S. C. (2018). How Well Do Incident Reporting Systems Work on Inpatient Psychiatric Units? *The Joint Commission Journal on Quality and Patient Safety*. doi:10.1016/j.jcjq.2018.05.002
19. Song, J., & Guo, Y. (2019). What influences nursing safety event reporting among nursing interns?: Focus group study. *Nurse Education Today*, 76, 200–205. doi:10.1016/j.nedt.2019.02.010

Tables:

Table 1 - Responses of staff related to factors encouraging generating incident reports

Questions	No. of Staff Agree	%	Rank
Incident reports result in process / system improvements	124	91.85	1
Management provide support and encouragement to report incidents	120	88.89	2
Incidents report system is easy to use	115	85.19	3
Confidence in Quality Department	113	83.70	4
Confidentiality and security of the reporting system	108	80.00	5
Transparency in managing incident reports	100	74.07	6
Feedback about the corrective or preventive action taken is communicated	98	72.59	7
Quick resolution time	90	66.67	8
I am legally protected	90	66.67	9
Just culture or Blame Free culture	89	65.93	10
Rewarding system (the more you report incidents you will be rewarded)	42	31.11	11

See table 2 – Relationship of factors encouraging reporting incidents with duration of work (1-5 years and 6-10 years)

Relationship of factors encouraging to reporting incidents with duration of work (1-5 years and 6-10 years)	
Questions	Chi-Square (p-value)
Incident reports result in process / system improvements	0.5332
Management provide support and encouragement to report incidents	0.7849
Incidents report system is easy to use	0.4981
Confidence in Quality Department	0.5067
Confidentiality & Security of the reporting system	0.4591
Transparency in managing incident reports	0.6813
Feedback about the corrective or preventive action taken is communicated	0.1949
Quick resolution time	0.085
I am legally protected	0.4047
Just culture or Blame Free culture	0.1368

Rewarding system (the more you report incidents you will be rewarded)	0.5528
---	--------

See table 3 - Factors that prevent/stop you from reporting incidents (Rank from 1 to 9, 1 as most important and 9 as least important)

Factors that prevent/stop you from reporting incidents (Rank from 1 to 9 , 1 as most important and 9 as least important)	
Factors	%
Lack of knowledge about incidents reporting policy	45.55
Fear of peer blame	10.47
Lack of feedback from previously reported incidents	10.47
Complexity of reporting system	8.38
Fear of termination	6.28
Fear of losing license	6.28
Fear of manager blame	5.76
Workload/lack of time	4.19
Fear of possible impact on performance appraisal	2.62

See table 4 – Relationship of factors preventing staff from reporting incidents with experience

Variable	Duration	N	Median	Quartile Range	Wilcoxon Rank Sum	p-value (2 tailed)	Mean Score
Fear of peer blame	1-5 years	119	4	4	5989	0.95	92.69
Fear of peer blame	6-10 years	65	4	3			92.13
Fear of manager blame	1-5 years	119	4	3	6018	0.99	92.45
Fear of manager blame	6-10 years	65	5	4			92.58
Fear of termination	1-5 years	119	4	4	6708	0.04	86.65
Fear of termination	6-10 years	65	5	4			103.2
Fear of losing license	1-5 years	119	4	5	6558	0.11	87.91
Fear of losing license	6-10 years	65	5	4			100.9
Fear of possible impact on performance appraisal	1-5 years	119	4	3	6693	0.04	86.78
Fear of possible impact on performance appraisal	6-10 years	65	5	2			102.96
Lack of feedback from previously reported incidents	1-5 years	119	6	4	5699	0.36	95.13
Lack of feedback from previously reported incidents	6-10 years	65	5	4			87.68

Workload/lack of time	1-5 years	119	5	5	6001	0.97	92.59
Workload/lack of time	6-10 years	65	5	6			92.32
Complexity of reporting system	1-5 years	119	7	5	5264	0.02	98.79
Complexity of reporting system	6-10 years	65	5	5			80.98
Lack of knowledge about incidents reporting policy	1-5 years	119	8	4	5504	0.12	96.77
Lack of knowledge about incidents reporting policy	6-10 years	65	8	5			84.68