

**Improving Medication Errors in the Kuwaiti Government Hospitals through Training and
Clinical Vigilance: Major Causes of Medication Errors**

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Most pieces of literature that have explored medication errors as a significant issue affecting the healthcare sector have discussed the problem from the perspective of the operations of a hospital setting (Prakash et al., 2014). This is why many studies that have delved into this issue use healthcare practitioners as respondents. However, medication errors emerge from different types of clinical problems, which are not only confined within the hospital setting (Westbrook et al., 2015). For example, the administrative structures and models of healthcare service provision in different jurisdictions influence how often medication errors occur. Consequently, the risks and advantages of conducting research in the hospital setting may affect the scope of generalising the findings (Newbould et al., 2017).

Solutions for curbing medication errors are contingent on the approaches adopted by researchers to investigate their topics of interest but most medical researchers have agreed on the negative effects of medication errors on patients (Westbrook et al., 2015). For example, according to Ferracini et al. (2016), medical errors affect patients in several ways. One of them is through adverse drug reactions (ADR), which are often diagnosed as a form of toxicity. Regardless of whether they are intentionally or unintentionally caused, they are often associated with elevated blood levels and high degrees of discomfort for affected patients (Ferracini et al., 2016). Some medication errors also cause inhibitions in drug metabolism (Ferracini et al., 2016). The unintended effects of medications are also heightened when there is an error. Since all drugs have the potential of causing ADR, it is important to first undertake a cost-benefit analysis of using the medicine in the first place (Ferracini et al., 2016).

Besides causing ADR, medication errors are also linked with low-efficiency levels of some drugs (depending on selected treatment methods) (Westbrook et al., 2015). In other words, medication errors influence the potency of a drug. Therefore, medication errors affect the amount of medicine that a person has to take to produce an effect. For example, a medication error could make a patient need 10 milligrams of a medicine to produce an effect, while without such an error they would only need 5 milligrams of the same medicine to produce the same effect. Broadly, these factors mean that medication errors reduce the efficacies of drugs.

Mistakes in providing medications are also associated with suboptimal adherence to treatment plans because some patients refuse to take their medication because of their adverse effects (Ferracini et al., 2016). When such effects occur, it becomes difficult to convince them to continue taking their medications because doing so would cause unbearable pain. Therefore, they would be persuaded to believe that not taking medication is better than using it in the first place. In other words, failing to take the drugs would be akin to relieving themselves of the pain and discomfort they would have experienced from taking wrong medication. Such doubts create suboptimal adherence to treatment plans. Collectively, these negative outcomes of medication errors decrease a patients' quality of life. The same effects could negatively influence an economy and healthcare system through the increased use of healthcare facilities and the increment in medical costs that are associated with high incidences of medication errors (Ferracini et al., 2016). In fact, in some jurisdictions, it has been reported that 6%-7% of medical costs are attributed to preventable medication errors (Ferracini et al., 2016).

Physician burnout, employee wellbeing, and work structures affect the occurrence of medication errors (Tawfik et al., 2018). Poor quality sleep, long working hours, mood swings and poor work performance among medical professionals are also linked to the occurrence of

such mistakes (Kalmbach et al., 2017). Trockel et al. (2017) support this assertion when they say that increased risks of medication errors are related to burnout and the lack of professional fulfilment. These problems are known to mostly affect healthcare professionals who are new to their places of work. For example, the first few months of internship makes young medical professionals susceptible to depression, especially based on poor sleep patterns (Kalmbach et al., 2017). Older physicians are also susceptible to the same problem because about half of them are fatigued. In fact, some reports suggest that excessive fatigue is estimated to affect more than half of these professionals (Tawfik et al., 2018). Consequently, there has been renewed interest among medical experts to improve working conditions in the healthcare environment to minimise the occurrence of mistakes that may affect the safety and quality of health services (Tawfik et al., 2018).

Some errors also occur because medicines sound like or look like each other. For instance, similarities in brand images cause confusion among healthcare practitioners who may prescribe the wrong drug to a patient. At the same time, it is difficult for a patient to detect such anomalies because of similarities in packaging and colour codes. Some pieces of literature support this narrative by saying that medication errors occur because of wrongful naming, labelling and packaging (Cousins, 2018; Ferracini et al., 2016).

The incidence of medication errors is also associated with the different operational practices adopted by healthcare organisations. For example, medication errors have been linked with the effectiveness of data analysis strategies in the medical setting (Chiampas et al., 2015). For example, some healthcare facilities use software to prescribe medicine, while others use paper-based techniques (Nguyen et al., 2015). Most paper-based techniques have been used for more than decade. However, their widespread application has created confusion regarding which

technique is the best. Therefore, different organisations use multiple error detection methods. Nonetheless, common techniques that are associated with paper-based models of error detection include chart reviews and software-enabled monitoring techniques. Other traditional methods of error detection include observation, incident reporting and patient feedback (Bolandianbafghi et al., 2017).

Effective reporting has been touted as a common method for tackling medication errors because it acts as a trigger warning to alert medical practitioners about an anomaly and correct it before it has a widespread impact. Here, it is important to understand that retroactive and proactive tools are commonly used in error detection. For example, some health agencies use audits as a retroactive tool of error detection and monitoring, while others consider auditing as an educational activity aimed at improving individual or team performance (Nguyen et al., 2017).

Information technology tools are newer techniques for detecting medication errors compared to paper-based solutions because of their inexpensive nature and high level of accuracy. In line with this view, the use of software to curb medical errors is considered the first step in the improvement of patient safety. For example, the computerised physician order entry technique has been successfully used to prevent medication errors in many healthcare facilities in the US, UK and around the world (Cho et al., 2014). The same is true for automated dispensing cabinets and bedside barcoding tools because both techniques have similarly been used in these countries and have been linked to a high rate of success in reducing medication errors (Nguyen et al., 2017). In addition, these IT-based techniques could potentially generate billions of dollars in cost savings (Nguyen et al., 2017).

Healthcare facilities that have used IT-based techniques to reduce medication errors have reported lower mortality rates and fewer complications (Cho et al., 2014). The benefits are

associated with increased levels of efficiency that technology accords healthcare service professionals to undertake their duties. For example, software-based tools of data management have been linked to increased capabilities of medical personnel to improve access to information. This is because the software helps them to establish links or patterns between treatment plans and stored data (Cho et al., 2014). The technological trend underlying the management of medication errors is partly explained by the popularity of the computerised provider order entry (CPOE) in managing medication errors in Europe and the US (Radley et al., 2014). Although the reduction of medication errors has been established using the CPOE, there is still contention regarding its ability to reduce the harm medication errors cause to affected patients (Radley et al., 2014).

The occurrence of such errors is partly linked with the existence of a culture of safety in an organisation. Alsaleh et al. (2018) define patient safety as “the freedom from accidental injuries during the course of medical care; activities to avoid, prevent or correct adverse outcomes which may stem from the delivery of healthcare services” (p. 2). Particularly, the creation of a culture of safety in healthcare organisations is linked with low incidences of medication errors (Alqattan et al., 2018). This positive outcome stems from the enforcing beliefs and attitudes that a culture imparts on those who are subject to it. For example, if an intern works in an organisation that values patient safety, she would have no other option but to meet this expectation.

References

- Alqattan, H., Cleland, M., & Morrison, Z. (2018). An evaluation of patient safety culture in a secondary care setting in Kuwait. *Journal of Taibah University Medical Services*, 13(3), 272-280. <https://doi.org/10.1016/j.jtumed.2018.02.002>
- Alsaleh, F. M., Abahussain, E. A., Altabaa, H. H., Al-Bazzaz, M. F., & Almandil, N. B. (2018). Assessment of patient safety culture: A nationwide survey of community pharmacists in Kuwait. *BMC Health Services Research*, 18(1), 1-15. <https://doi.org/10.1186/s12913-018-3662-0>
- Bolandianbafghi, S., Salimi, T., Rassouli, M., Faraji, R., & Sarebanhassanabadi, M. (2017). Correlation between medication errors with job satisfaction and fatigue of nurses. *Electronic Physician*, 9(8), 5142-5148. <https://doi.org/10.19082/5142>
- Chiampas, T. D., Kim, H., & Badowski, M. (2015). Evaluation of the occurrence and type of antiretroviral and opportunistic infection medication errors within the inpatient setting. *Pharmacy Practice*, 13(1), 512. <https://doi.org/10.18549/PharmPract.2015.01.512>
- Cho, I., Park, H., Choi, Y. J., Hwang, M. H., & Bates, D. W. (2014). Understanding the nature of medication errors in an ICU with a computerized physician order entry system. *PLoS One*, 9(12), 1-13. <https://doi.org/10.1371/journal.pone.0114243>
- Cousins, D. (2018). *Public-health burden of medication errors and how this might be addressed through the EU pharmacovigilance system.*
https://www.ema.europa.eu/documents/presentation/presentation-public-health-burden-medication-errors-how-might-be-addressed-through-european-union_en.pdf
- Ferracini, F. T., Marra, A. R., Schvartsman, C., Dos Santos, O. F., Victor, E., Negrini, N. M. M., Filho, W. M. B., & Edmond, M. B. (2016). Using positive deviance to reduce medication

- errors in a tertiary care hospital. *BMC Pharmacology & Toxicology*, 17(1), 36.
<https://doi.org/10.1186/s40360-016-0082-9>
- Kalmbach, D. A., Arnedt, J. T., Song, P. X., Guille, C., & Sen, S. (2017). Sleep disturbance and short sleep as risk factors for depression and perceived medical errors in first-year residents. *Sleep*, 40(3), 1-10. <https://doi.org/10.1093/sleep/zsw073>
- Newbould, V., Le Meur, S., Goedecke, T., & Kurz, X. (2017). Medication errors: A characterisation of spontaneously reported cases in Eudravigilance. *Drug Safety*, 40(12), 1241-1248. <https://doi.org/10.1007/s40264-017-0569-3>
- Nguyen, H. T., Nguyen, T. D., van den Heuvel, E. R., Haaijer-Ruskamp, F. M., & Taxis, K. (2015). Medication errors in Vietnamese hospitals: Prevalence, potential outcome and associated factors. *PloS One*, 10(9), 1-10. <https://doi.org/10.1371/journal.pone.0138284>
- Nguyen, M. R., Mosel, C., & Grzeskowiak, L. E. (2017). Interventions to reduce medication errors in neonatal care: A systematic review. *Therapeutic Advances in Drug Safety*, 9(2), 123-155. <https://doi.org/10.1177/2042098617748868>
- Prakash, V., Koczmara, C., Savage, P., Trip, K., Stewart, J., McCurdie, T., Cafazzo, J. A., & Trbovich, P. (2014). Mitigating errors caused by interruptions during medication verification and administration: Interventions in a simulated ambulatory chemotherapy setting. *BMJ Quality & Safety*, 23(11), 884-92. <https://doi.org/10.1136/bmjqs-2013-002484>
- Radley, D. C., Wasserman, M. R., Olsho, L. E., Shoemaker, S. J., Spranca, M. D., & Bradshaw, B. (2014). Reduction in medication errors in hospitals due to the adoption of computerized provider order entry systems. *Journal of the American Medical Informatics Association*, 20(3), 470-6. <https://doi.org/10.1136/amiainl-2012-001241>

- Tawfik, D. S., Profit, J., Morgenthaler, T., Satele, D. V., Sinsky, C. A., Dyrbye, L. N., Tutty, M. A., West, C. P., & Shanafelt, T. D. (2018). Physician burnout, well-being, and work unit safety grades in relationship to reported medical errors. *Mayo Clinic Proceedings*, 93(11), 1571-1580. <https://doi.org/10.1016/j.mayocp.2018.05.014>
- Trockel, M., Bohman, B., Lesure, E., Hamidi, M. S., Welle, D., Roberts, L., & Shanafelt, T. (2017). A brief instrument to assess both burnout and professional fulfilment in physicians: Reliability and validity, including correlation with self-reported medical errors, in a sample of resident and practising physicians. *Academic Psychiatry*, 42(1), 11-24. <https://doi.org/10.1007/s40596-017-0849-3>
- Westbrook, J. I., Li, L., Lehnbohm, E. C., Baysari, M. T., Braithwaite, J., Burke, R., Conn, C., & Day, R. O. (2015). What are incident reports telling us? A comparative study at two Australian hospitals of medication errors identified at audit, detected by staff and reported to an incident system. *Journal of the International Society for Quality in Health Care*, 27(1), 1-9. <https://doi.org/10.1093/intqhc/mzu098>