



**Leadership, Systems Thinking and Patient Safety: A
Critical Analysis of a Morphine Overdose Incident in an
Elderly Patient**

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Lecturer's Name: Tonia Babalola

Student Name: Hetvibahen Chauhan

Student Id: 2522438

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1.Introduction

The safety of medication is one of the main elements in quality healthcare delivery, but it remains a difficult task worldwide. The present report provides critical analysis of a particular case in which an 89-year-old CML patient suffered from accidental overdose of morphine oral solution due to misinterpretation of dose prescription. After admission into a hospital and attempts at treating the patient, his condition only worsened and eventually he passed away. There have been some important issues that emerged regarding ineffective communication, leadership, governance, and system designs within health and social care.

Leadership in health and social care refers to the act of exerting influence on people and teams to help attain common goals, mainly concerning patient care and their safety. Leadership skills are very important when working in complicated environments of health and social care institutions that are characterized by stress and uncertainty of decisions among multi-disciplinary teams. The transformational, transactional, and situational leadership are types of theories of leadership in this area. Transformational leader is focused on changes and safety in general, while the transactional one pays attention to conformity with standards and regulations.

Centralization vs. decentralization of the health system is another important feature. A centralized organization allows top management to have control and enables standardization in operations. On the other hand, decentralized management gives more authority to lower management and employees on site, which increases responsiveness in the process. Interdependency between the two organizational setups determines the effectiveness of communication and consequently patient safety.

In order to analyse the case study, it will be used a systems thinking framework. Systems thinking is an approach that understands that healthcare decisions do not happen in isolation but as the consequence of interactions of many different elements such as people, process, technology, and organizational structure. With the help of this theory, it is possible to determine the root causes of failures.

The objective of this report is to conduct a critical assessment of the extent to which leadership, governance, and design of the system have led to the negative outcome

in this situation. The report will consider the main issue in detail by drawing on examples from around the world as well as within the country. It will look into the impact of centralization and decentralization as well as the theories of leadership in making decisions and holding people accountable.

2. Main Body and Analysis

2.1 Identifying the Problem and System Context

In simple terms, the problem associated with this scenario is that of an overdose resulting from poor communication among the stakeholders administering the medication. Nonetheless, the actual problems that have triggered this problem are systemic challenges within the provision of health care services.

Worldwide, medication error has emerged as one of the most significant public health concerns. According to the World Health Organization, medication errors cost about \$42 billion annually and affect millions of individuals every year. Research findings indicate that medication errors are prevalent in both the primary and secondary care settings in the UK, with some occurring due to defective communication procedures. Senior citizens, similar to the client in this case study, are prone to these occurrences because of certain factors.

At national level In this case, there are issues that are frequently raised by the patients about patient safety including inadequate patient education and poor communication when transferring the patient from one department to another. The misunderstanding of the labeling on the packaging of the drug by the patient and his wife reflects the inadequacy of the information provided to them.

At systems theory level By applying the systems thinking framework, this problem can be said to result from various interrelated factors that created the scenario rather than just being a problem itself. Some of these factors can be cited as the confusion arising out of the labeling of the drug packaging, lack of patient counselling, inability to verify the understanding of the patient about the medication, etc.

On the contrary, it needs to be stated that one should pay attention to the governance system here because it is also important to take this issue into consideration. The governance system is aimed at overseeing the process and ensuring that everything

is managed correctly. One may say that in the present case, the governance system was faulty because it failed to notice an error.

Also, there were some factors associated with the environment and organization related to the discussed issue. It is obvious for everyone that being employed in the sphere of health care is very stressful because one experiences many constraints, including an overloaded work schedule.



This figure represents the systems approach to analysing the health care system. As can be observed from the figure, there are several factors that affect the process which include the organization, environment, people, task, equipment and many more. As is shown from Case, for example, the case of overdosing morphine was not as a result of one cause but because there was a problem in the several components of the system. The problems arose from failure to communicate effectively between the practitioners and the patient (people), failure to label properly (equipment), among other issues.

2.2 Centralisation and Decentralisation

Structure within healthcare can be defined as either centralized or decentralized. The type of structure adopted by an organization is essential in determining communication

channels, decision-making, and accountability. In this case scenario, the combination of centralization and decentralization played an important role in how the situation developed since it was characterized by a deliberate morphine overdose. From an analysis of the structure adopted within the health care system, the impact of the combination of both centralization and decentralization on this incident becomes clear.

The definition of centralization can be described as a situation whereby decision-making takes place mainly from the top level within an organizational hierarchy. This applies to any decisions concerning policy, guidelines, and standardized treatment protocols within health care. In the UK, health matters, including prescription of medications and associated safety standards, have been centralized in terms of being controlled by organizations like the NHS to regulate clinical practices. For example, the prescription of morphine oral solution in this case followed standardized procedures in dosing and labeling conventions. Centralization helps to control the practice of prescribing drugs.

However, despite being an advantage of centralisation, it is crucial to note that it does not mean effective communication during the care delivery process. Some of the challenges associated with centralisation include the fact that the process does not focus on the patient. The use of standardised labels of medications by pharmaceutical companies is useful, but in this case, it did not benefit the patient and his caregiver because they could not comprehend the information on the label. Centralisation creates rigidity because it focuses on providing a general solution to problems rather than addressing the needs of individual patients.

Decentralisation refers to the process of spreading decision-making powers to healthcare professionals in the medical facility. Some of the advantages of decentralisation include its ability to increase flexibility since professionals are able to cater to the needs of each patient. For instance, in this case study, decentralisation is reflected in the manner in which healthcare professionals explain medication dosages to the patient and his wife.

Despite being helpful in offering individualized care for patients, decentralization leads to inconsistency in the practices as the ways in which health professionals communicate the information differ. Regarding the present situation, it was difficult to make sure that the patient knew how to properly administer medications because there

were no definite guidelines as for the process of administering drugs that should have included having the patient repeat his instructions.

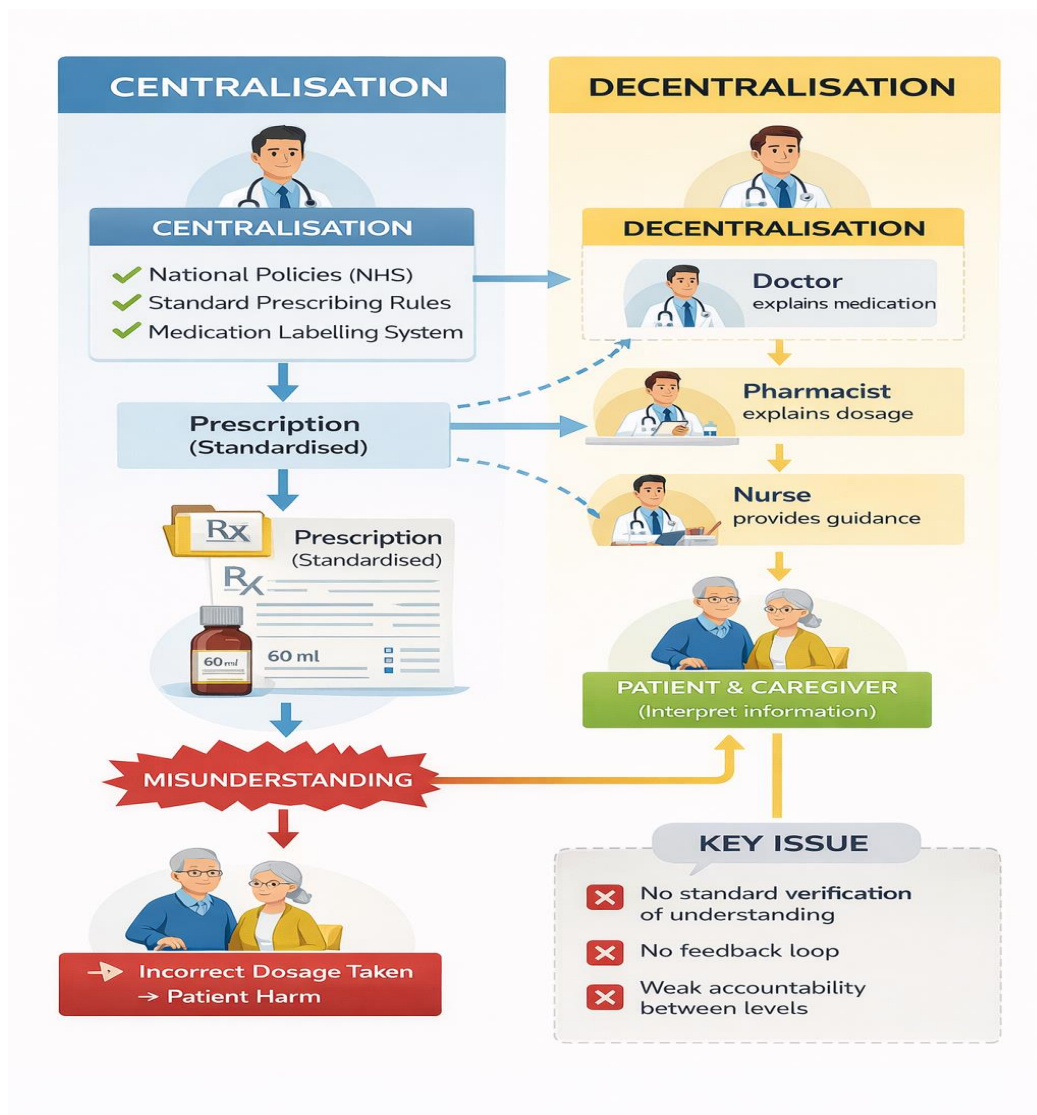
The next issue related to the problem presented lies in the interrelation of centralized and decentralized parts of the system. While some parts of the system (centralized ones) worked on creating the relevant policies and guidelines for management and care of the patient, other parts (decentralized ones) did not perform their function and ensure that the patient receives all the necessary information concerning his medication. It was required to create an appropriate feedback loop in order to address the issue.

One can see that the components of the system were not coordinated properly. Centralization and decentralization are supposed to interact for successful care delivery; however, nothing was done in the present case to achieve the goal.

Moreover, the organizational structure per se turned out to be a barrier in addressing this situation. If the system is highly integrated, safety interventions will be carried out in order to prevent undesirable consequences from happening. In this particular case, it was possible to omit some steps and thereby expose the patient to additional risks. In general, a decentralized approach to communications tends to cause non-accountability and, therefore, becomes risky.

Decentralized communication was considered in numerous papers dedicated to medicine. In general, medication errors occur in case of decentralization, as it is stated. Decentralized communications become risky but can prevent medication errors if combined with accountability.

Summary, One can conclude that both centralization and decentralization have their respective advantages and disadvantages. The advantage of centralization is that it creates uniformity whereas decentralization is flexible, yet there is no coordination and communication within the process. In connection with the above-mentioned case study, the problem experienced does not stem from using only one of the two processes; rather it is from failure to coordinate both processes.



The illustration below is designed to depict the relationship of both centralization and decentralization in the healthcare system, which led to the medication error. In relation to centralization, it is characterized by national policies, consistent medication prescription guidelines, and standardized labeling of medications in order to ensure coordination and consistency. In contrast, decentralization is reflected by healthcare professionals who directly instruct the patients regarding their medications individually. While it is more convenient and flexible for individual practitioners to provide personalized care, it is also more susceptible to inconsistency in the way that the instruction is being communicated. Clearly, the error happened because the misunderstanding has emerged when the instructions were understood by the patient and the caregiver. In addition, there was a lack of communication and standard protocol in ensuring the accountability and feedback in verifying instructions provided between different levels of the system.

2.3 Leadership Theories and Application

The importance of leadership in determining health care results cannot be underestimated, especially when it comes to the complexity of interactions and safety of patients. In this particular case, the unintended overdose with morphine reveals several problems that can be associated with leadership, such as poor communication, ineffective accountability, and insufficient risk assessment. The use of such approaches as transformational, transactional, situational, and systems leadership helps to examine the impact of leadership on health care results in this case.

Transformational leadership has been considered to be among the most efficient models that are practiced within healthcare facilities. The model involves the development of motivation among health practitioners in the delivery of high-quality services while promoting safety among patients. Transformational leadership entails the encouragement of an environment that promotes openness, learning, and collective responsibility. Considering this particular case study, it is clear that transformational leadership is lacking because of the neglect of efforts to ensure that patients understand the medication process. Health practitioners adhered to normal practices without going further to confirm whether the patient and his/her caregiver understood the process. A transformational leader would foster a culture of safety that makes health practitioners feel responsible for providing services and confirming results, including the level of comprehension among patients.

Here transactional leadership that involves maintaining order based on policies and procedures seems to dominate the whole process. This is due to the fact that transactional leadership plays an important role in making sure that health practitioners abide by particular set of procedures such as prescribing medications and labeling them. Transactional leadership plays an effective role in ensuring that people follow the right procedures; however, it fails when it comes to situations that involve patients. This is because in this particular case, though everything was done in accordance with procedure, but the results were unfavourable.

The other point of view has something in common with the situational leadership theory because one should be able to change behaviours due to specific situations and people. Here, one should discuss an elderly person who can be viewed as

vulnerable. Situational leadership theory implies that medical workers need to make a judgment on patients' ability to understand things, think, and get help. Due to the absence of such a process, one may claim that medical workers failed to modify their behaviour based on specific situations. It becomes obvious that one cannot speak about situational leadership when one observes strict adherence to protocols without considering patients' features.

The concept of systems leadership seems especially applicable in the present situation because this concept revolves around the study of the interactions of various components of a complex system. Systems leaders understand that the results produced by health care systems depend on many variables, such as policy, procedures, and human behaviour. Hence, using a systems approach to this situation, the problem of medication misunderstanding would be perceived as a potential problem of the entire system, not just one occurrence. For instance, there could have been preventive actions, such as standard procedures of educating patients or computer warnings about problematic medications.

The above graph represents the impact of various types of leadership on the behaviors exhibited by the staff and the resulting patient outcome. The transformational leadership style results in proactive communication and the formation of safety culture among the staff members. In such a case, safety measures are put in place and ensure good results in patients. In transactional leadership, there is compliance in which case the risks will be reduced although they are not entirely mitigated. Poor leadership, marked by poor communication and no input from the staff member, increases the likelihood of error. With effective systems leadership, hospitals will be able to identify risks and mitigate them effectively.

An essential aspect of leadership is whether it is reactive or proactive. This can be established from the case above because this type of leadership is clearly reactive since it responds to a past situation and does not try to prevent a future occurrence of the same problem.

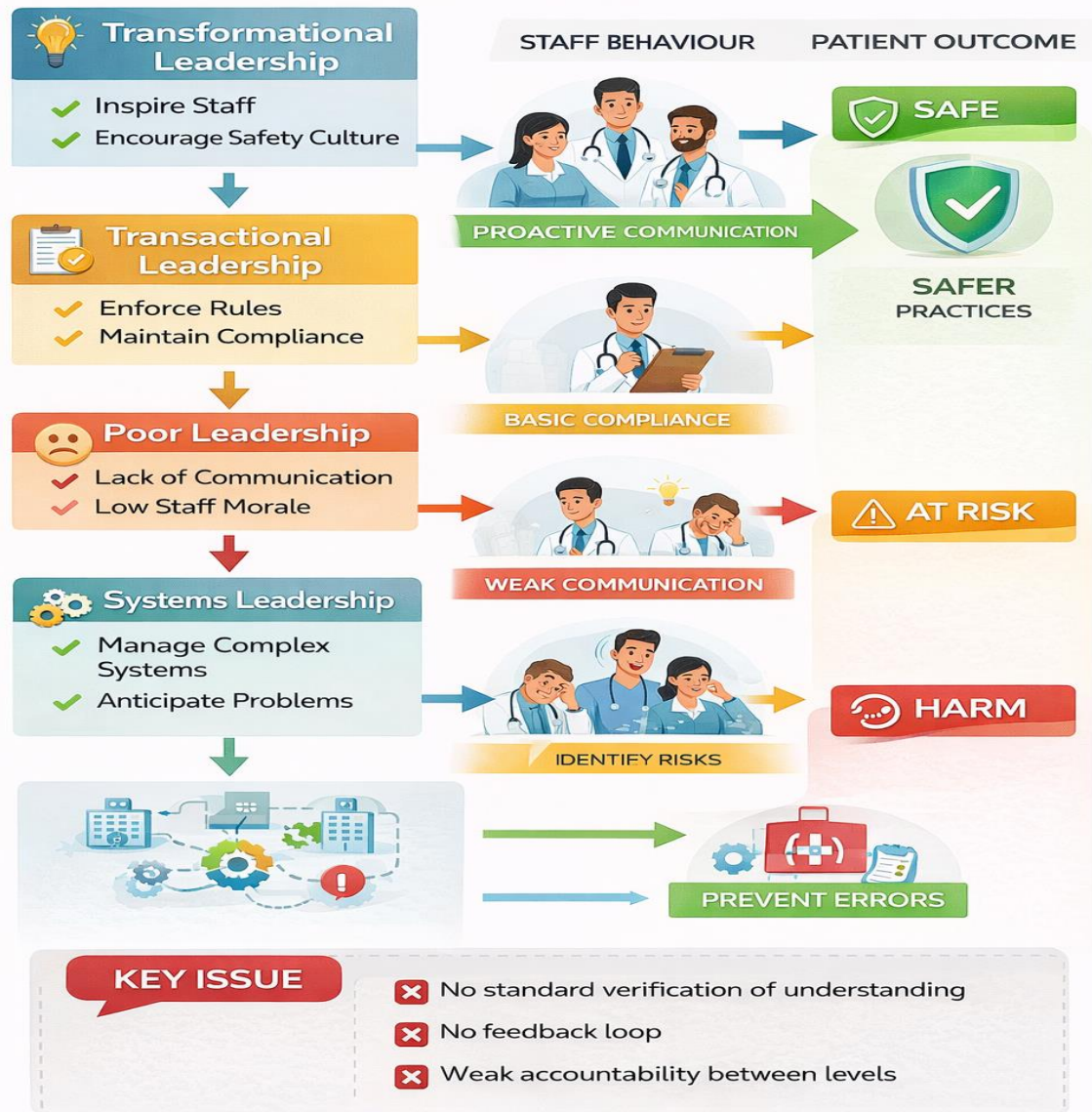
Clearly, the importance of good leadership is reflected in facts and figures. Research shows that good leadership guarantees more successful outcomes in terms of patient safety, staff motivation, and fewer errors. Conversely, poor leadership causes inadequate communication, poor accountability, and threats to the patient. Thus, the

lack of consideration regarding the patient's understanding indicates poor leadership because duties have to be outlined so that individuals can meet them.

Another critical issue is the emotional intelligence of leaders. Good leaders can speak up and understand patients' expectations. In this case, emotional intelligence can help prevent misunderstandings. For example, conducting a conversation with the patient and his or her parents can promote a positive outcome and ensure proper understanding.

Conclusion From the analysis of the case study employing different leadership theories, it is evident that there were a number of cases of bad leadership practices which resulted in the undesirable end result. In the first place, the predominance of transactional leadership and the absence of transformational and systems leadership ensured that a compliant atmosphere prevailed over comprehension. Secondly, the lack of awareness regarding the environmental conditions, together with proper risk assessment, contributed significantly towards the occurrence of the event. There is, therefore, a need for healthcare institutions to ensure the development of efficient combinations of transformational, situational, and systems leaderships to ensure patient safety.

Leadership Theories and Application within the Case Study



The following diagram indicates the impact of various types of leadership on the staff actions and patient outcome in the case study. Transformational leadership fosters an environment that allows for active communication from staff members and results in patient safety. At the same time, transactional leadership leads to passive adherence to policies and guidelines and does not guarantee that patient safety is achieved. On the other hand, the lack of leadership associated with ineffective communication and staff member participation may contribute to patient risk because mistakes can happen under such circumstances. The problem with the mentioned leadership style is its

inability to address complex healthcare environments and risks associated with it. Systems leadership allows for the identification of risks and implementing preventive measures. As for the critical problem observed in this scenario, the absence of feedback and verification procedures needs to be highlighted as contributing to patient risk.

2.4 Improvement and Lessons Learned

The assessment of this case demonstrates the influence that failures in leadership, governance, and systems have played together on creating an avoidable negative outcome. In this case, the morphine overdose has not been caused by human error alone, but by systemic failures such as poor communication and lack of verification and accountability measures. The review of these factors will help understand what healthcare organizations should do in order to create a safer system.

One of the factors associated with this incident is failure to recognize the issue early on. The communication problems and inability to verify the information provided by the patient and their caregiver indicate the presence of a flaw in the system because there has been no procedure for the confirmation of patient understanding. Studies have found that a substantial percentage of patients cannot read medication labelling information correctly; hence, patients' age could be another factor contributing to the problem.

Leadership was one of the important factors that contributed significantly to creating the circumstances for this occurrence. Without proper leadership, it would be difficult to anticipate any possible danger or address it. This is because the system worked reactively, dealing with problems that already happened rather than preventing them. It is essential for good leadership to recognize possible weak points and implement measures to prevent them from happening. Proper leadership would have guaranteed the implementation of practices like teach-backs, which involved having patients repeat the information that was provided in their own terms to ensure comprehension.

The governance structure was also a factor in causing the issue since it did not ensure consistent implementation of the safety practices. Although policies on safety related to drug administration were possibly present, they were inconsistently implemented at the front-line level. There is a disparity between what the policies say and what is done

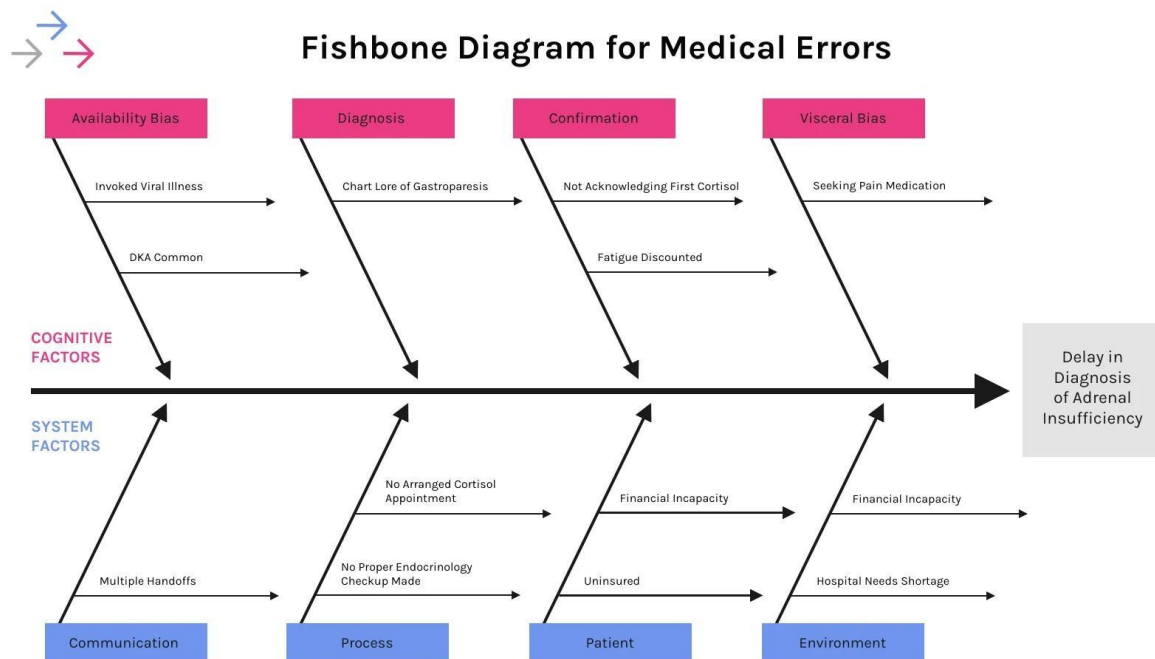
when it comes to the translation of those guidelines into actual day-to-day work. Effective governance should not only entail having policies, but it should also include enforcement measures.

An additional lesson learned from the case study is the importance of enhancing communication in health-care delivery system. Ineffective communication is one of the most common causes of medical errors especially during transition of care. It should be noted that poor communication in the case under discussion could not guarantee safe medication. To enhance communication, a number of measures have to be taken; among them training the health-care professionals on effective communication strategies, simplification of medication labeling and the use of visual communication devices can be mentioned. Participation of the patient in decision making can contribute greatly to his/her better comprehension of the prescribed treatment.

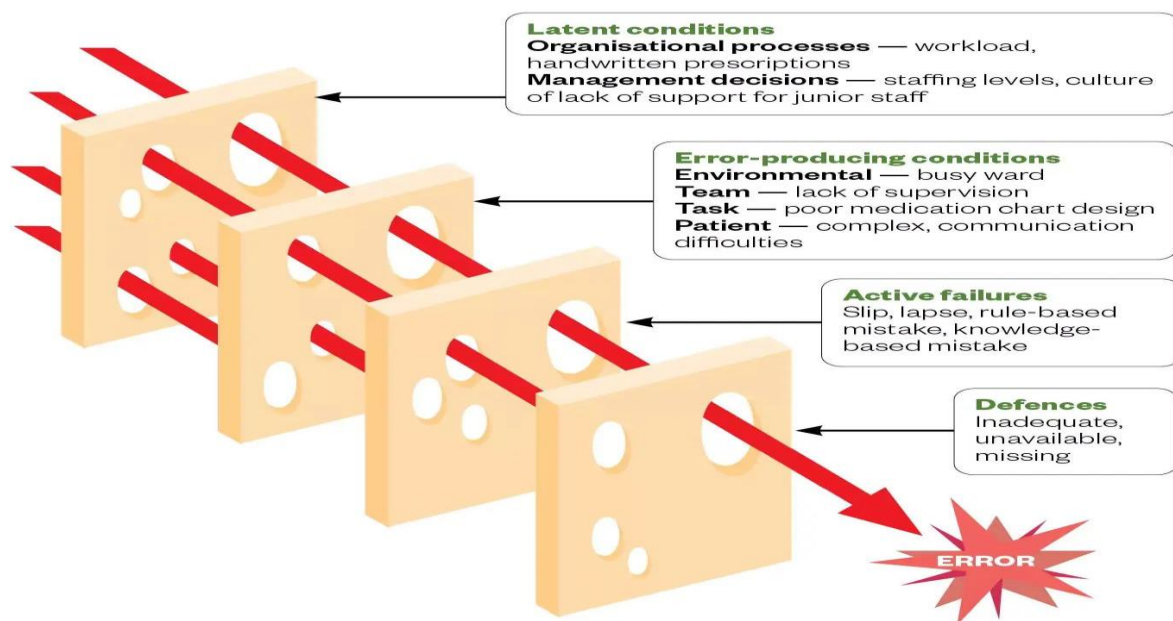
The issue related to system design should be mentioned as well because it can assist in reducing the likelihood of committing such errors. The main idea behind such a concept is that the system must include different levels of protection when it comes to all possible situations with the patient. Such a model is called "Swiss cheese model" and according to which if the number of system failures exceeds the certain threshold, then an error occurs. In this case, there were several levels of protection that did not work, such as the improper label, insufficient information, and poor follow-up. The inclusion of more levels of protection through the implementation of electronic prescriptions may serve as an effective preventive measure. The issue related to improvement should be discussed as well because mistakes should be considered as a chance to improve something. The learning culture encourages reporting of errors or near-misses without being punished for that. This is also called just culture.

The final question related to learning concerns the interaction between structure, leadership, and feedback. Here, the combination of no centralized communication mechanism along with ineffective leadership and no feedback process has led to the chance of making mistakes. To address this problem, it would be necessary to establish closer collaboration between leadership and communication and between leadership and governance through feedback processes. One of the possible approaches would be following up on risky medication prescriptions.

Conclusion, some of the main lessons which have been drawn from this scenario include those on the importance of leadership, governance, communication, and good systems. Among others, inadequate patient communication, lack of accountability, and absence of feedback mechanisms were some of the weaknesses which allowed such a mistake to happen. As a way of dealing with such weaknesses, it becomes necessary to come up with a strategy that addresses these aspects.



Fishbone Diagram or Ishikawa diagram is an effective technique for identifying the underlying reasons behind medical errors. Though the above fishbone diagram identifies common reasons for medical errors in healthcare settings, it can be used to understand the reasons for morphine overdose in the case study provided as well. The important reasons identified by the analysis include Communication issues (confusing medication orders), Patient-related issues (such as old age and possible cognitive impairments), Process issues (lack of verification process), and Environmental issues (heavy workloads). It becomes clear from this discussion that the error resulted from several interlinked reasons rather than one specific reason alone.



Swiss Cheese Model (Reason, 2000) gives an effective reason behind multiple failures of the systems that led to the incident described in case study two. As indicated in the figure, the errors happen due to the existence of failures in multiple defences at one go. In this case, the latent failures in the systems included poor leadership and ineffective governance, leading to weaknesses in the system. The error-prone condition here includes poor communication, insufficient instruction for the consumption of the drug, and the patient's traits such as age. The active failures within this case include the wrong dosage of the drugs that were administered by the patient himself.

3. Recommendations

The recommendations that follow have been made after analysing the morphine overdose case of an elderly patient, and these are presented based on issues such as communication, leadership, governance, among others. These recommendations are designed to improve patient safety, improve organizational performance, and avoid similar medication errors in healthcare organizations.

3.1 Communication Improvements

Clear communication is an important aspect that ensures effective medication management. The case of morphine overdose would not have occurred due to lack of clarity in instructions given and failure to determine whether the patient understood the

instructions. To overcome this problem, health practitioners need to develop a strategy that involves effective communication in relation to medication. The use of teach-back technique would be recommended because this strategy allows patients to repeat what was told to them in order to determine whether they understood the instructions (Wachter, 2012).

The instructions provided to patients should be in simple language with illustrations when necessary. The use of standard labelling techniques for all medication, which involves larger fonts and clear dosages, is also recommended since this will reduce confusion, especially among older people.

Additionally, follow-up communication strategies, including telephone visits or scheduling visits after certain days, need to be developed.

3.2 Leadership for sustaining Improvement

Leaders are important in creating an environment focused on patient safety and improvement. From this experience, leaders in healthcare facilities should apply transformational leadership, as it involves motivating staff and fostering open communication, among other benefits (Bass and Riggio, 2006).

It is also vital for health organisations to create a just culture, whereby healthcare practitioners are able to disclose errors and near misses without being blamed (Reason, 2000). A just culture will aid the identification of organisational weaknesses.

It is important for health practitioners to apply situational leadership when handling certain types of patients, like the elderly. In particular, using situational leadership enables effective interaction between the patient and the practitioner, thus reducing errors.

3.3 Strengthening Governance and Accountability

Effective governance is very important in ensuring that the measures put into place to protect patients' safety are adhered to effectively. In the morphine overdose case study, there seems to be a lack of adherence to safety measures. There is a need to put in place policies and mechanisms that will ensure that patients understand instructions regarding drugs before discharge.

Organisations can establish processes and procedures on drug use that will include the verification stage. This will ensure that all patients understand the instructions before they get discharged. Another important area that needs to be improved is the establishment of accountability. Proper accountability is achieved through role clarification.

3.4 System Improvement and Continuous Learning

Improvements in the design of the health care system would be required in order to reduce the probability of medical errors. EPS can be very effective in preventing medical errors related to unclear instructions, as well as problems with dosing caused by standardized prescriptions.

It would also be reasonable to establish multiple layers of protection by checking prescriptions by pharmacists according to the "Swiss Cheese Model" described by Reason in his work in 2000.

The creation of a culture of continual learning would also be necessary. Systems should be developed that allow health care organizations to report errors without any consequences. Regular training programs that teach professionals about communication skills, safe medicine administration, and patient-centred care should be organized.

At last, stakeholder engagement and participation of patients in the process of decision-making would help to solve the problem of medical errors.

4. Conclusion

The current case study highlights some of the problems in communication, leadership, and design that can cause severe consequences in patients' health conditions. In the presented case, the accidental overdosing with morphine was not caused by one mistake only; it was caused by several factors related to the absence of appropriate patient education, lack of proper communication strategies, and poor governance.

Healthcare leadership is extremely important for improving the results in practice. In this situation, the lack of proactive and patient-centred leadership is a major reason why the risks have not been identified and avoided properly. Poor governance is also

evident, as the healthcare organization failed to promote consistent adoption of safety practices. Applying systems thinking in healthcare allows analysing all the links and their interactions within the healthcare delivery process.

Overall, enhancing the safety of patients necessitates the use of a comprehensive strategy encompassing leadership, governance, and learning. Through the implementation of best practices, organizations will be able to mitigate such risks in the future.

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