

MSc Public Health and Social Care in Practice

Case Study Analysis Report

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1-Introduction

Len was 89 years old patient diagnosed with Charcot-Marie-Tooth (CMT) disease. CMT is a neurological disease which weakens individual's muscles, ankles and tendon reflexes (Okamoto and Takashima, 2023). This led to Len falling originating a series of GP and hospital visits resulting in the prescription of morphine oral solution. The prescribed dose was 1.25ml-2.5ml every for 4 hours when required. However, Len's wife accidentally administered 5ml leading to an overdose and a case of pneumonia found in the hospital the next day. After recovery Len unfortunately passed away. It is crucial to analyse this case study to understand what systems were involved and how they met different the different circumstances leading to the incident.

1.1-Leadership concepts:

Leadership is the ability of managing teams, skills and challenges in healthcare systems. This role has the aim of improving systems to improve patient's outcome for treatments and emergency cases.

1.1.1-Centralisation and decentralisation definitions:

Centralisation is a structure where decisions and planning are made by a specific group of people which often include leaders of organisations or sectors. In health and social care centralisation consists of services being divided into specialised sections leading to improved outcomes in decision making as the heads of each sector are experts in the service area. However, decentralisation is a structure where the role of making decisions is distributed within the organisation meaning this does not belong only to the leaders of sectors or organisations. In healthcare, this means that the duty of making decisions is of professionals that are closely interacting with service users as they are linked to their medical process (Sapkota *et al.*, 2023).

1.1.2-Importance of leadership theories and styles:

There are different types of leaderships explored through theories such as Situational/Contingency which explore a leader's adaptability to certain situations and Behavioural Theory of leadership which suggests that good leadership comes from observing and learning actions and behaviours. The main types of leadership involved in Len's case include transactional (a structure was followed throughout care), situational (adaptability to situations), democratic (team decision making for long term plans) and autocratic (fast decision making in emergencies).

It is crucial to select and follow adequate leadership styles to strengthen quality and implementations of services (Sfantou *et al.*, 2017). Appropriate leadership improves how teams involved in care interact between themselves and the patient leading to stronger

outcomes. Having a leadership system allows organisations to be in order as each sector or professionals will be focused on their role or area of expertise leading to procedures moving into a direction.

2-Problems within Len's case study:

The main problem found in this case study is the cause oral morphine overdose. This occurred as Len and his wife did not see the prescription label placed outside the medication box. Len's wife ended up administering 3 doses of 5ml of morphine as she thought that the prescription amount was on the bottle. However, the values she believed that were the correct dosage was the strength of morphine (10mg/5ml) and what further supported her belief is that a 5ml syringe was given along with morphine bottle. The prescription given by the GP was between 1.5-2.5ml every four hours. However, the dosage that should have been taken is 1.5 ml due to Len's reduced kidney as impaired patients have difficulties in clearing morphine out of the system (Owsiany *et al.*, 2019). All guidelines in regard to labelling were followed, suggesting that the family was not able to follow instructions given by the professionals involved in the case. Confusing dosage and strength of medication is one of the main causes of there being overdose incidents, pharmacy professionals should have ensured that the Len's wife understood about the administration of the medicine as older people are more likely to make mistakes with dosage (Mira, 2019).

2.1-National and global statistics of the incidence:

Medication overdose is a growing public health issue amongst older people leading to an increase in related incidents and fatalities. Morphine is a form of opioid medication used to treat severe, acute or chronic pain (NHS, 2025). Due to its strength and composition, morphine users are likely to develop an addiction, this is why it is under tight regulation and requires constant monitoring of patients. However, current global and UK statistics show that morphine overdose is high. To prevent these incidents professionals must assist their patients. Additionally, it is important to note that opioid overdose also occurs outside medical settings meaning that opioid substance abuse is another issue that needs to be solved.

2.1.1-Global statistics:

In 2019, there were 600,000 drug abuse related deaths. 80% of the cases were related to opioids including morphine. 25% of the deaths were led by opioid overdose (WHO, 2025). The global prevalence of opioid overdose is high due to misuse without prescription. Due to opioids composition addiction and overdose lead to overdose which as a final consequence it leads to death (The Lancet Global Health, 2024). This incidence is more likely to happen in high income countries as globally there is an uneven distribution of opioid drugs for medical

purposes. In these high-income countries, those at risk of opioid misuse are those with a history of substance abuse or those that suffer from mental health conditions (Cragg *et al.*, 2019). These are the main reasons why opioids such as morphine are tightly regulated and managed by medical teams.

2.1.2-UK Statistics:

In the UK, over 300,000 people between the ages of 15 to 64 were found to use opioids with 87,000 injecting them (NICE, 2025). 47.1% of drug related deaths in 2024 involved the use of opioids (ONS, 2025). This means that 2,621 people died to substance misuse. This shows that control of substances such as morphine is crucial as misuse occurs without prescription or through recreation. These statistics show that without medical supervision overdose and death related to opioids can occur at higher scales. In England and Wales, there has been a rise in medical prescription meaning that there is higher risk of mortality rate (Chen, Knaggs and Chen, 2021).

Statistics in the UK show that this is a rising problem in high income countries due to higher distribution of opioids occurring in them. This is an issue that must be urgently addressed as it is on the rise meaning that there is higher risks of overdose cases and mortality.

2.2-Systemic weaknesses in the case study:

Throughout this incidence, there were different people and departments involved in the care of Len. These include: his GP, Emergency Department from his local hospital and the community pharmacy (see Figure 1). Each of these systemic factors had weaknesses in this process.

One of the weaknesses presented by the GP was poor communication and potential; decision making. On day 24 of Len's care, Len had a telephone triage by the GP where he was prescribed morphine. Telephone triage is a method which allows GPs to have more flexibility in their workload by deciding if a patient needs to go in person or not. However, this is not suitable for all patients due to different needs and vulnerabilities. Due to this, there is always risk of poor communication leading to misunderstanding of symptoms or instructions given by the GP (Fotland *et al.*, 2024). In this case, Len's GP had to avoid unnecessary contact due to Covid-19 lockdown to protect Len as he was a vulnerable patient. However, this decision could have been poor as symptoms could have been described wrongly as Len was struggling to breathe. In this case, with precaution, the GP should have recommended an in-person appointment to assess Len's condition further.

The Emergency department was also involved in Len's care. This department has the role to respond to patients suffering from acute episodes of a disease or pain, patients with life-

threatening illness or injuries and patients where certain departments are not able to respond to their needs urgently at that specific time (Swancott *et al.*, 2024). This department responded to Len when firstly he was struggling to breathe on day 9. They carried out blood tests to observe if there was any infection present causing breathing difficulties, chest X-rays to verify if there was a rib fracture present. These were one of the successes of the emergency department in responding to Len's episode of breathing difficulties. However, he was then given lidocaine patches which is a form of local anaesthetic (Bahar and Yoon, 2021). which caused his skin to irritate causing Len to stop using the patches. To ensure that no irritation occurred, the emergency department should have ensured that tests were carried out or checked Len's medical history to confirm if any component of the lidocaine patches could harm him as he was already having different health problems at the same time. The other time where this department took care of Len was on day 25 where he was taken in with a suspected morphine overdose. To block morphine effects, naloxone is usually utilised as they have opposite effects to each other (Zhang *et al.*, 2022). In this case overdose, Len received intravenous infusion of naloxone was being observed by the department team. However, naloxone should have been administered immediately as morphine has been in Len's body for hours. Starting the infusion immediately could have increased the chances of Len surviving by clearing morphine from his body earlier.

The community pharmacy was responsible in handing the morphine solution to Len's wife. The community pharmacy followed labelling guidelines which include letters with font size of 12 or above, providing instructions in lists, dosage numbers in instructions, information written in a white background with bold highlights to more crucial information and instructions about usage (Saleem *et al.*, 2021). The potential weakness presented by the pharmacy could have been lack of clarity while explaining to Len's wife about the dosage as she had hearing and memory problems.

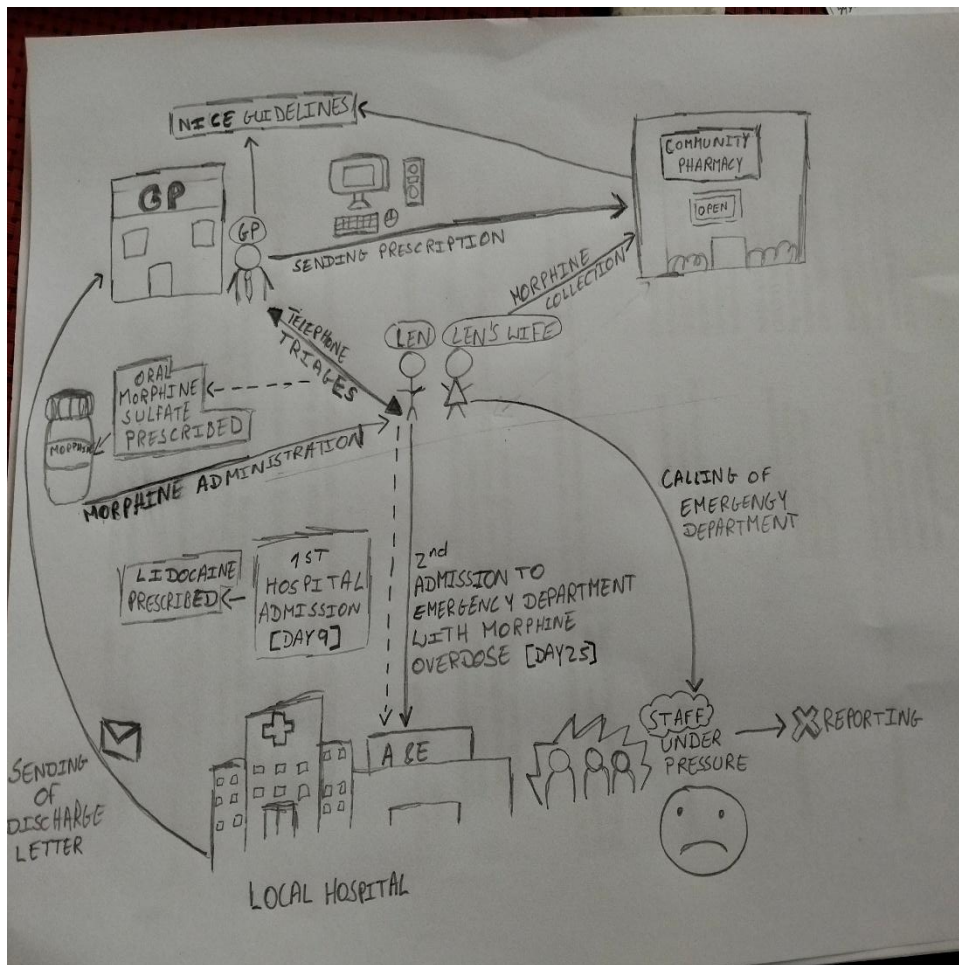


Figure 1: Systems thinking Rich picture. This diagram shows how different organisations and people interacted to respond to Len's situation. From this it is seen that all healthcare departments are involved directly and indirectly in a patient's care. The GP is the main person to interact with Len as he carried out telephone triages and in-person appointments if required. The GP was also the person receiving updates from the emergency department due to his patient being admitted to the department. Additionally, it is seen that the GP interacted with the community pharmacy by sending oral morphine solution to them. All these organisations commonly follow the National Institute for Health and Care Excellence (NICE) to ensure that there is similarity in responding to certain situations (Salla, 2026).

2.3-Governance:

The level of governance that affects Len's care is national. This means that all departments involved in Len's care were following a procedure and a method that was given nationally to respond to similar cases. The body responsible for creating national guidelines for the NHS and other health providers to follow is NICE. NICE's national guidelines ensure that all resources are cost-effective through supporting least costly interventions (Garbi, 2021), used as effectively as possible and that all health care departments and patients are able to have

equal access and be able to utilise them equally (Rid *et al.*, 2015). NICE also ensures that all their guidelines for treatment and care provision are supported by scientific finding to increase their reliability and effectiveness in delivering the care to patients. NICE has guidelines aimed for GPs for them to respond to their patients' moderate to severe pain. NICE recommends to start treatment with paracetamol. This would be the first line of treatment. However, if the patient does not see improvement and their pain persists, the GP might prescribe a non-steroidal anti-inflammatory drug such as ibuprofen, naproxen and aspirin which are available over the counter. If both paracetamol and the non-steroidal anti-inflammatory drug do not stop the pain, the patient might be prescribed a small dosage of an opioid drug such as morphine (NICE, 2025). This national guidance was followed by Len's GP to respond to the chest pain that Len was feeling. Another national guidance that was part of Len's care is related to medication labelling and the community pharmacy that handed the morphine solution. This type of national guidance was implemented by the Medicines and Healthcare products Regulatory Agency (MHRA). MHRA has roles including to control medicine and medical devices to protect the public and the health sectors. Under the control of medicine, come the approval of packaging and labelling information of all drugs in the UK (Medicines and Healthcare products Regulatory Agency, 2024). The guidance provided by MHRA states that the labelling of medications must include the identification of the medicine, dosage, side effects and additional information such as the product size. The design of the label following the guidance must ensure that headings are distinguishable from information (Medicines and Healthcare products Regulatory Agency, 2020). These allow labelling to be clear and understandable for professionals and patients. This national guidance was followed by the community pharmacy responsible for handling the oral morphine solution.

2.4-Challenges:

The main challenge that the health staff faced while delivering Len's care was the COVID-19 pandemic. Len's incident occurred during 2020 meaning that there were social restrictions affecting interactions between people and between health professionals and patients. Patients were advised to stay at home and if they needed medical support, they would need to rely on phone triages (Goyal *et al.*, 2021). This is what happened in Len's case, when he was prescribed oral morphine solution, he was on a phone triage with his GP. Len was considered as a vulnerable patient as he had CMT and was an older adult (Lebrasseur *et al.*, 2021). This pandemic also worsened Len's condition as he had to follow restrictions in place. These restrictions led to decreased walks meaning that pain was able to worsen as him and other patients had reduced contact with healthcare professionals (Prada *et al.*, 2020). To increase Len's safety, the GP ensured to decrease contact however it could have been needed before prescribing morphine.

3-Centralisation and Decentralisation within the case study:

Within the case study, it was visible that there were different forms of which the departments worked to trying to achieve the best outcomes for Len. These forms include centralisation in systems and decentralisation in systems discussed below.

3.1-Centralisation:

Centralisation is a system used by organisations where the leader or a main group is responsible for all types of decisions. When a healthcare organisation operates utilising this system, they will be having higher chances of responding to high volume of patients leading to efficacy (Pfisterer-Heise *et al.*, 2026). The goal outcome of centralisation also includes the promotion of consistency in decision making and standardisation (Scarffe *et al.*, 2022). An example of centralisation was shown during the COVID-19 pandemic. Important decisions related to public health were made by the government. One of these decisions included the implementation of a lockdown due to rise in cases and mortality (Greer *et al.*, 2022). Another example of centralisation is NICE. They set guidelines by creating decisions based on scientific data so the NHS can follow. This can be said to also be an example of standardisation as guidelines are made to ensure that all organisations involved follow the same procedure while responding to similar situations (Dimmer, Baird and Puligandla, 2024). Linking this to Len's case, the GP, the community pharmacy and emergency department all acted accordingly to NICE's guidelines to ensure that Len received sufficient care and that his needs were met. Having standardisation as goal is an advantage of this system as all organisations will follow the same guidelines depending on the scenario they encountered. This allows more accurate methods and guidance to be made as authorities will have a clearer picture of the effectiveness of their guidelines at national level.

Using this system also has its disadvantages. This includes the delay in decision making and reduced autonomy (Krenyacz and Revesz, 2025). By using centralised systems, professionals with low levels of governance will need to depend on the decisions made by organisation's leader or main group responsible for the operations. This causes urgent cases to be less successful as decisions would require time to be made and take time to be implemented. In contrast to decentralisation systems, their response would be slower as decentralisation allows those directly involved with cases to make decisions. During Len's case this was shown through the emergency department doctors asking senior doctors to decide the causes of Len's respiratory failure.

3.2-Decentralisation:

Decentralisation is an organisational system where services divide decisions and tasks into fewer sectors or groups allowing efficiency and a better use of resources. This allows all

professionals to participate in important decision making and delivery of specific services leading to improved delivery of services (Ramsay *et al.*, 2025). This shows that higher authorities in healthcare organisations are not responsible in making decisions alone. The aim of decentralisation is to promote participation in decision making to sectors and professionals that have low levels of governance. An example of a decentralisation system in use is the NHS. The NHS is made up of hundreds of organisations which act at national, regional or local levels (NHS England, 2024). By having different branches, it means that the professionals working in that sector have the right to make decisions to meet local or regional demands or urgencies such as outbreaks.

The advantages of this system are that it provides improved local responses and more engagement with local communities (Sreeramareddy and Sathyanarayana, 2019). In this case study the advantage of this system is seen through Len's family's interaction with the GP. The GP is a form of a primary care network working locally to ensure the physical and mental wellbeing of the community. While interacting with the GP, Len had the opportunity to participate in his care through engagement. Another advantage of using this system is that there will be quicker decision making. This means that professionals or sectors not part of the leadership team, will be able to make critical and urgent decisions without waiting guidance from higher bodies unlike centralisation. In this case study, it was seen that the emergency department was responsible for all decisions while taking care of Len.

As the advantages provide quicker and more efficient care delivery there are also disadvantages for this type of system. One of the main disadvantages organisations might face due to use of decentralisation is health inequities. This is one of the risks that can be caused by decentralisation as inequities is dependent on the socio-economic barriers that might have already existed (Sumah, Baatiema and Abimbola, 2016). This disadvantage leads to delay in delivery of services, inefficiencies and poor quality of services due to waiting lists or lack of resources (Oliveira, Santinha and Sá Marques, 2023). Considering that during Len's care there was the COVID-19 pandemic, and the NHS was under pressure, it suggests that there could be lack of resources to support him. Len needed support in opening the morphine bottle due to child resistant lid. Considering Len had CMT it means he would be more likely to struggle the bottle meaning that in the beginning he could have been given a bottle that was not child resistant. However, lack of resources could have led to them providing that bottle to Len. Another disadvantage of utilising decentralisation system is that there is higher risk of poor data handling. Different regions are more likely to report more of an incident or disease more than others. In regions where there is less resources there is higher chance that there will be underreporting of certain things. The Yellow Card scheme is system used to report medications' adverse reactions (O' Donovan *et al.*, 2022), incidents related to a specific

medication or reporting malfunction of medical devices. The Yellow Card report would then assist MHRA to monitor the safety of the products to ensure that patients and professionals are protected from any harm (Medicines and Healthcare products regulatory Agency, 2025). During Len's care, a Yellow Card report should have been submitted however it was not as staff were under pressure.

3.3-Critical analysis:

Through analysing centralised and decentralised systems, it can be concluded that majority of the system that participated in Len's care outcome was decentralised. This assisted in decision making however in terms of reporting data this was not effective. Underreporting to the Yellow Card scheme has been found to be at the rate of 94% (Deslandes *et al.*, 2022). This means that there decrease in patient safety as it is crucial to report incidents to determine if a medication is still suitable for a group of patients and to allow professionals to monitor effectively (Coole, 2023). This shows that decentralised systems have a high likelihood of creating data gaps which is not effective for dealing with future similar cases.

4-Leadership theories and their application:

In this section leadership theories and their application are going to be explored. The two theories that are going to be explored are the situational-contingency theory and behavioural theory of leadership.

4.1-Situational-Contingency Theory:

Situational-contingency theory of leadership states that leaders must adapt to the situation they are found in to provide the most suitable solution to the problem instead of using their current traits or personality to solve the problem (Benmira and Agboola, 2021). Situational-contingency leadership causes leaders to change their ways of managing to maximise effectiveness and responsiveness. Since decentralised system was mainly used in Len's case, it means that all professionals involved had to adapt to Len's situation and make decisions based on that moment and not mainly on their skills. An example of situational-contingency leadership is when in circumstances of emergency, a leader might need to act autocratically to ensure that the situation is accordingly solved. By adapting to an autocratic leadership style in emergencies, it means that the leader would make all decisions without including other professionals' opinion. This causes employees to be more responsive and decrease in mistakes (Qtait, 2023). This leadership method was seen in Len's interaction with his GP. The GP was a reactive leader during Len's care. This means that it was only the GP responsible in making decisions in the first part of Len's care process, for example, the GP was responsible for the prescription of the medications that he was taking. While this shows reactive leadership,

it also shows proactive leadership where the GP and community pharmacy were working together to reach their patient's well-being. While Len was in care in the emergency department on days 9 and 25, situational-contingency leadership was not applicable as the case was complex and the doctors required to work in a team to quickly respond to Len's respiratory difficulties. This style of leadership was not applicable as there was not a specific leader taking care of the case. In the emergency department, the leadership should be less distributed as in cases of emergency it more likely that there would be different views leading to increased chance of errors in procedure. An error could have occurred as the professionals were discussing whether to administer naloxone immediately or not. If the professionals involved did not provide Len with oxygen supply, it could have ended in an early fatality as naloxone was not administered immediately to block morphine's effect. By increasing leadership within those with more expertise, there will be higher chance of success and less mistakes made.

4.2-Behavioural Theory of leadership:

Behavioural theory of leadership states that leaders are made from observing actions, environments rather than relying on existing traits (Indeed Editorial Team, 2025). This theory means that anyone can become a leader as the role is learned through observation and this can be done through training an individual for the role. For example, this type of leadership occurs when an employee is shadowing their employers so they can learn about their position, they do this through observing actions of their employer, observing the factors observing the environment and the employer's interaction with employees with lower levels of governance. There are different types of leadership under this theory, these are task-oriented, people-oriented, participative and autocratic. Task-oriented leadership refers to the action of completing tasks and work effectively. This occurs through constant monitoring of performance and by setting clear goals and roles (Döring, Pihl-Thingvad and Vogel, 2024). In healthcare this would be useful in circumstances of emergency as it would reduce the chances of there being errors in procedures as this type of leadership is task centred. People-oriented leadership (also known as servant leadership) style is the opposite of task-oriented as it focuses on the staff's development rather than focusing in accomplishing goals and completing tasks. This style of leadership looks to empower a team leading to successful patient outcomes through empathy and building of trust (Singh *et al.*, 2024). As this leads to successful outcomes and team successes, this would not be suitable in emergency situations such as Len's. Participative style of leadership is a form of democratic leadership which has the aim to include the organisation in decision-making process (Wang, Hou and Li, 2022). Using this style of leadership also allows mentoring of employees by teaching how to effectively work and promotes the employees' participation by allowing them to also give

advice (Romi *et al.*, 2022). In healthcare this is more suitable when there is no emergency as it will allow each team member to develop skills and expertise that will turn them into leaders that are effective in each task and circumstances. When Len was in the emergency department this method of leadership would not be adequate as the head of the department would not have time to mentor as the case was complex and each decision would impact the outcome of Len's care. Finally, the last type of behavioural theory is autocratic. Autocratic leadership is a type of leadership where the leader alone has absolute power to make all decisions with no team participation (Al-Thawabiya *et al.*, 2023). This is the most suitable type of leadership as decisions are taken quickly and with precise decision in emergencies (Palweni, Malesela and Randa, 2023). This would be suitable when Len was in the emergency department however there was not specific leader commanding the situation as professionals were working collectively and reactively. If there was a specific leader responding in leading the medical team during Len's care, the style of leadership they should use is autocratic to reduce the chances of mistakes and increase patient safety.

5-Improvement and lessons from case study:

The decentralised system during Len's case study showed that there are still gaps among the system. One of them being the underreporting of circumstances. By using these systems there is risks of there being inequalities due to the distribution of power within an organisation such as the NHS. This type of distribution creates the main gap due to there being differences in socioeconomic status in regions and localities. Decentralised also allows uneven resource distribution leading to poor response in patient care and increase the risk of failure. These systems led to there not being a stable leadership during Len's care as professionals were working in a team meaning that mainly the method of leadership was participative. This led to delay in administering naloxone which further worsened Len's kidney to function and made it harder for it to clear morphine from the body. From this case study it is seen that Len already struggled to breathe due to issues on his diaphragm. Prescribing morphine to Len would require very close monitoring as the medications' side effects include muscle stiffness and respiratory difficulties (NHS, 2025). This means that Len was at high risk of suffering from the most serious side effects due to CMT and his diaphragm issues. The GP was being following the NICE's guidelines to respond to Len's needs however it would be more suitable to prescribe gels or steroid drugs to manage the pain while trying to find the solution instead of prescribing a high-risk medication for a vulnerable patient. From this organisations and healthcare professionals can see that they might need to take decisions that will differ from the guidelines for the patient's best interest as they are forms of advice and not compulsory to follow. For there to be improvements in the procedures, healthcare professionals must have a

leader that will take responsibility in different sectors in case of emergency. These leaders will need to ensure that data is recorded so statistics can be accurate and with minimum gaps to reduce inequalities.

6-Recommendations:

In a case of a future similar case, the healthcare professionals must be aware of NICE's guidelines they must act in a manner that it will benefit the patient's interests (Varkey, 2021). For example, if they know a patient's wellbeing would be at risk due to the composition of a medication, they must provide a safer alternative even if it goes against the guidelines. For healthcare professionals and service deliveries to improve, there must be a range of different leadership involved as this sector encounters different situations. These include transformational, authentic and transactional leadership styles. Transformational leadership builds trusting relationships within the team, promotes professional levels and growth (Notarnicola *et al.*, 2024). This is a form of leadership promotes wellbeing of staff while meeting patient demand. Authentic leadership is required for constant improvement as this aims to promote staff commitment, maximise staff engagement and improve performance (Alilyyani, 2022). This will cause professionals to record any information that is relevant for data analysis which are used to examine the effectiveness of services. Transactional leadership focuses on rewards and penalties based on compliance levels (Sikalgar *et al.*, 2025). This is suitable in cases of emergency while the others can be applied in daily basis. These styles will allow members to improve teamwork allowing effective communication and collaboration. These will also improve relationships between different departments in healthcare, for example, the emergency departments and the pharmacy's hospital will be able to communicate information more effectively due to improved methods of leadership. Another way of improving is to train professionals. Training professionals is crucial because it is required to increase clinical knowledge, improve their skills and to increase competence (Shiri *et al.*, 2023). By changing leadership methods and constantly training healthcare professionals through workshops, mentorships and e-learning, different departments and professionals will have more successful outcomes in care delivery.

7-Conclusion:

Len's case study highlighted the problems that arise from the different type of leaderships and methods utilised in healthcare. Additionally, this case study showed the dangers of utilising opioids without being supervised or while lacking enough support. The use of this led to an increase in mortality rates. To address this, authorities must increase their control over opioids drugs whether if they are prescribed or not. The main systemic weaknesses found in Len's

case was poor decision making from the GP and the emergency department This shows that constant training is required to prevent mistakes in decision making. Having a strong leadership is important as it prevents errors in procedures and leads to staff improvements. A base to a strong leadership is a good level of governance as it will create guidance, promote equity and social justice in healthcare. By having a strong leadership and governance it will mean that interactions through systems thinking will be more positive. These will lead to patients from all regions to receive equal access to care and resources.

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