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MSc Advancing Practice

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Anticipatory Prescribing in Community Palliative Care in Jersey: A Retrospective Clinical Audit

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Declaration

I hereby declare that this thesis is my own work and effort and that it is has not been submitted elsewhere for any award. Where other sources of information have been used, they have been acknowledged.

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I would also want my Family – Dominic, Thea and Nico. Your patience throughout will always be appreciated

Acronyms and Abbreviations

ACP	Advanced Clinical Practice	**HQIP**	Healthcare Quality Improvement Partnership
AP	Anticipatory Prescribing	**JHC**	Jersey Hospice Care
CASP	Critical Appraisal Skills Programme	**JIC**	Just in Case
CINAHL	Cumulative Index to Nursing and Allied Health Literature	**MDT**	Multidisciplinary Team
CNS	Clinical Nurse Specialist	**MND**	Motor Neurone Disease
CQC	Care Quality Commission	**NHS**	National Health Service
EMIS	Egton Medical Information Systems	**NICE**	National Institute for Health and Care Excellence
GOJ	Government of Jersey	**NMC**	Nursing and Midwifery Council
GP	General Practitioner	**OHID**	Office for Health Improvement and Disparities
GSF	Gold Standards Framework	**PICOT**	Population, Intervention, Comparison, Outcome and Timeframe
HSE	Health Service Executive	**RGU**	Robert Gordon University
SPCT	Specialist Palliative Care Team	**SD**	Standard Deviation

Abstract

Background As patients approach the end of their life, anticipatory prescribing can be put in place to help support symptom control. This way of prescribing aims to be pre-emptive, in place before symptoms develop. These medicines are therefore at risk of not being required by patients, with associated financial implications of this approach. This clinical audit has evaluated anticipatory prescribing within Jersey, in particular reviewing the administration and waste of anticipatory medications and how the local setting algins with local and national policy.

Project design 30 patient records were included in this review, from patients who had anticipatory medications in place and died within the community setting over a 9-month period. Quantitative data was collected from the patient's anticipatory prescribing documentation, with descriptive statistical analysis used to explore the data. Qualitative narrative documentation was also extracted to review prescribers' rationale to evaluate if individualised prescribing is present in the local community.

Findings The findings showed that the core medication categories were regularly in place within the reviewed records. However, evidence of individualised prescribing was suggested when individual medications were explored, with differences in medication choice present.

A combined total of 2,641 medication vials were prescribed to all patients. More than half (54.6%) were administered to patients, whilst 45.4% did result in medication waste, which was 49.6% of the total cost of all prescribed medications. Over half (53.12%) of all administered anticipatory medications were administered within the last seven days of life. The administration of anticipatory medications showed variation between patient records, with qualitative narrative documentation used to support understanding of this. Limited access to all qualitative narrative documentation did impact the ability to examine the presence of patient specific prescribing.

Conclusion The evaluation of anticipatory prescribing within the local setting included quantitative data, supported by qualitative narrative documentation to provide context to prescriber's decision making. It was shown that prescribing practice largely aligns with local and national policy. The recommendations that arose from this project include continued support for individualised prescribing within the local setting, the introduction of a community symptom assessment tool and a re-audit on this topic.

Chapter 1: Introduction and Background

1.1 Introduction

This dissertation will discuss a retrospective clinical audit, conducted as part of an MSc in Advancing Practice. The first chapter will focus on exploring the background of the chosen topic; anticipatory medications prescribed for community-based end-of-life patients, and their administration or wastage, in the last seven days of life, assessing alignment with the National Institute for Health and Care Excellence (2017) (NICE) Quality Statement 3; anticipatory prescribing of medications in the last week of life, and the Government of Jersey (2022) (GOJ) Adult Palliative Care: Anticipatory Prescribing Policy.

1.2 Background

The background for this project is underpinned by two aspects. The first key aspect is that anticipatory prescribing (AP) is used for patients who are in, or who are approaching the end of their life and is aimed at ensuring effective symptom control (GOJ, 2022) (NICE, 2017) (Twycross, Wilcock and Howard, 2022). The second aspect is the current financial strain on hospice services, supporting opportunities for minimising avoidable waste, without impacting service quality (Care Quality Commission, 2025) (CQC) (Bowers, 2023). In combination, these aspects provide the foundations and rationale for this project.

Community palliative care patients will receive care that is specific to their current needs, whether this is palliative or end of life care. The two phases are both holistic and place emphasis on individualised care that is aimed at enhancing a patient's quality of life (NICE, 2017) (World Health Organisation, 2020). Palliative care can be accessed at any stage of a patient's illness (Marie Curie, 2024), whilst end of life care is commenced when a diagnosis is less than 12 months (NHS, 2022). During end-of-life care there is more emphasis on planning for the dying phase, including what additional support may be required, e.g. Anticipatory Prescribing (NHS, 2022)

(NICE, 2017). This dissertation will focus on end-of-life care, specifically, the last seven days of a patient's life.

Increasing financial constraints within the Hospice sector support the need for a more efficient use of healthcare resources, with Hospices locally and nationally both reporting operational deficits (Hospice UK, 2025b) (Jersey Hospice Care, 2025) (JHC). Within the local setting, JHC receives 43% of their operational costs through Government funding, with the remainder achieved through fundraising (JHC, 2025). Even though JHC reported an operational deficit in 2023, substantially increased government funding enabled expansion of services ensuring future sustainability (JHC, 2025).

UK Hospices are also largely supported through fundraising, with approximately a third of operational costs Government and NHS funded (Newson, 2024). Reports from 2023-2024 show that two thirds of hospices are in financial deficit (Hospice UK, 2025b), with cost saving measures such as reduced inpatient beds and reduced community nurses implemented (NHS England, 2021). Plans are in place for Hospices in England to also benefit from additional government funding (Department of Health and Social Care, 2024).

Significant increases in the number of palliative patients are being predicted (Hospice UK, 2020) (GOJ, 2023). In the UK, a 25% rise in demand is estimated by 2048 (Hospice UK, 2025a). Whilst, in the local setting, this demand rises to 100% by 2036 (GOJ, 2023). The GOJ (2023) report that more patients wish to die at home than are being achieved, highlighting the stretch on services that are already in financial deficit (JHC, 2025) (Hospice UK, 2020). Hospices across the country must introduce new ways of working, to be more cost effective and maximise resources (Hospice UK, 2020), but avoid limiting access to services and reduced standards of palliative care (Sleeman, 2025).

1.3 Context of Audit

The focus of the project is community anticipatory medications prescribed and wasted within the last seven days of a patient's life and how this aligns with local and national policy (GOJ, 2022) (NICE, 2017).

Within the local setting the specialist palliative care team (SPCT) look after patients within their own homes, the Hospital, care homes, and an 8-bed inpatient unit at JHC. This audit will focus on community patients who die within their own homes and in care homes. The author is a community palliative care clinical nurse specialist, supporting patients with symptom management (Latham and Nyatanga, 2018).

Being able to die at home is a wish for many patients (GOJ, 2022), with Anticipatory Prescribing recognised as a contributing factor to a comfortable death (GOJ, 2025). Anticipatory Prescribing allows healthcare professionals to prescribe medications for the dying phase in anticipation of symptoms presenting (GOJ, 2022). When symptoms are managed, patients can avoid admission to other settings for symptom control, e.g. the hospital (Marie Curie, 2025), enabling end of life wishes and preferences to be met (GOJ, 2022). The Gold Standard Framework coding (GSF) is commonly used locally to determine a patient's prognosis and their need for AP, with patients deemed appropriate when coded GSF amber or GSF red (weeks to days prognosis) (GOJ, 2025). Having these medications in place in a timely manner is considered best practice (Morgan et al., 2023).

'Just in case' boxes (JIC) are used to store anticipatory medication within a patient's home (GOJ, 2022). The box enhances security of medication but also produces an audit trail through regular stock take, and a record of what is administered and destroyed (GOJ, 2022). Healthcare professionals can administer medications 24 hours a day (GOJ, 2022), with quick access having the ability to improve a patient's end of life experience (NHS England, 2021). All contents of the

JIC box are then destroyed when no longer required, e.g. the patients' condition improves, or the patient died (GOJ, 2022).

The Jersey Anticipatory Prescribing Policy (GOJ, 2022) guides health care professionals locally to prescribe, dispense and administer. This project will only examine the Anticipatory Prescribing guidance within this policy, and the aspect which highlights how this policy follows guidance from NICE (2017). Palliative care within the local setting is guided by The GOJ (2022) who follow guidance from NICE (2017). Both agree on an individualised Anticipatory Prescribing approach, including assessment of potential symptoms and individualised care plans (GOJ, 2022) (NICE, 2017) (NICE, 2015).

Although symptoms in the dying phase can be unpredictable, this type of prescribing aims to incorporate all anticipated symptoms that may occur (GOJ, 2022); pain, nausea, agitation, shortness of breath and respiratory secretions (GOJ, 2025). All Anticipatory Prescribing is administered in an injectable form, which ensures patients can continue to receive these medications if the oral route becomes inaccessible (GOJ, 2022). Standard practice locally tends to involve patients receiving a single medication from each Anticipatory Prescribing category, being an opioid, an anti-emetic, an anxiolytic and an anti-secretory (GOJ, 2025). NICE (2015) acknowledge this way of prescribing risks not being patient specific and increases the likelihood of medications being wasted. NICE (2015) also report practice varies across the UK, with different locations following their own local policy on what particular medications from each category are prescribed, which is usually guided by anticipated symptom burden for a patient (GOJ, 2025).

To assess the local settings alignment with policy, individualised prescribing must be explored. To achieve individualised prescribing, each patient should be prescribed medications that are specific to them and their current needs, with medication doses, route and indication all prescribed on a case-by-case basis (NICE, 2017). Both policies suggest this way of prescribing (NICE, 2017) (GOJ, 2022); however, it is unclear if this is achieved in clinical practice.

Not all patients will experience symptoms or require medications as they die (Marie Curie, 2025) with unused medications being destroyed (GOJ, 2022) (Morgan et al., 2023). The cost of waste for all NHS medications is estimated at £300 million each year, with most of this being reported as avoidable (NHS, 2025). Although this cost covers all medicines and is not specific to AP, the University of Cambridge (2023) report that most anticipatory medications are not used. NICE (2015) recognise Anticipatory Prescribing waste as a concern, suggesting a review is needed. For this dissertation, waste of anticipatory medication will be determined if any vials of medication are left remaining after a patients' death.

NICE (2015) continue to advocate Anticipatory Prescribing as a necessity for symptom control at end of life, recognising that it has the potential to ensure patients can die at home, which can therefore be seen as cost effective, in comparison to being moved to another care setting. Nonetheless, the cost effectiveness of Anticipatory Prescribing continues to be debatable (University of Cambridge, 2023), when over 300,000 patients receive palliative care a year (Hospice UK, 2025c) and 85% of the cost per prescription can result in waste (University of Cambridge, 2023). Strategies to minimise avoidable waste, whilst continuing to provide effective symptom control to all who require must therefore be considered (CQC, 2025) (NICE, 2017) (GOJ, 2022).

Although an aspect of this clinical audit is aimed at exploring waste and costs of AP, the fundamental aim of Anticipatory Prescribing is that patients can have a dignified comfortable death (Marie Curie, 2025). Beauchamp and Childress (2013) ethical principles of beneficence and nonmaleficence support this, with Anticipatory Prescribing able to minimise a patient's level of suffering and reduce harm for patients and their family.

The principle of justice ensures that resources are used equitably and appropriately, so that anticipatory medications in the dying phase continue to be available to all (Beauchamp and Childress, 2013). This project does not intend to limit access to

these medications through highlighting medication waste, but instead encourage ethical use of resources (CQC, 2025).

A project on this topic has not previously been conducted within the local setting, to the project leads knowledge, with its findings having the potential to make recommendations for quality improvement of services or future projects (NICE, 2023). In summary, this chapter has highlighted the need for a clinical audit to be conducted in community palliative care within the local setting.

1.4 Project Question, Aim and Objectives

Question What categories of anticipatory medications are prescribed for community-based patients in their last seven days of life and to what extent are these administered or wasted and how does this comply with NICE (2017) Quality Standard QS144 Quality Statement 3, and GOJ (2022) Adult Palliative Care: Anticipatory Prescribing Policy.

Aim To evaluate categories of anticipatory medications prescribed for community-based end-of-life patients, and their administration or wastage, in the last seven days of life, in accordance with NICE (2017) Quality Standard QS144 Quality Statement 3; anticipatory prescribing of medications in the last week of life, and GOJ (2022) Adult Palliative Care: Anticipatory Prescribing Policy.

Objectives

1. To identify the categories of anticipatory medications prescribed in the last seven days of life.
2. To determine which medications were most frequently administered and what are wasted.
3. To identify if there are commonly wasted medications.
4. To estimate the cost of wasted medication.
5. To inform future anticipatory medication prescribing practice.

1.5 Project Structure

This dissertation has commenced with chapter one; an exploration of the background on this topic, highlighting the rationale for this project. A literature review will now be conducted in chapter two, exploring current Anticipatory Prescribing literature. Chapter three will review the methodological approach that underpins this project. The findings of this audit will then be examined in chapter four, with these findings then discussed further in chapter five, which will also include the project limitations and implications for future practice. Finally, chapter six will include the conclusion, highlighting any recommendations for future practice.

Chapter 2: Literature review

This chapter will identify and discuss current literature on community AP. The search strategy used to source literature will be explored, with discussion then on identified themes from this literature.

2.1 Search Strategy

A literature review uses a systematic approach to source literature, which is then critically analysed to ensure credibility and relevance before being categorised into themes to provide a structured overview of a topic (Coughlan and Cronin, 2021). To ensure a robust literature review, a clearly defined and transparent search strategy must be established to ensure relevant literature is obtained (Aveyard, 2019) (Polit and Beck, 2021).

For this project, the PICOT framework (Population, Intervention, Comparison, Outcome and Timeframe) was used to develop the question and was returned to as a starting point to establish key search terms. Synonyms for initial initial search terms were identified and Boolean operators applied for database searching (Melnyk and Fineout-Overholt, 2015). Through breaking down the elements of the project question, database searching was structured and ensured all aspects were considered (Polit and Beck, 2021). Through clearly defined search terms, project transparency was enhanced, meaning the searches strategy could be replicated (Aveyard, 2019).

Aveyard (2019) expresses caution if PICOT is used too rigidly, with the potential to limit relevant literature, especially with niche topics (Booth, Sutton and Papaioannou, 2016). Booth, Sutton and Papaioannou (2016) agree with Aveyard (2019) recommending flexibility in use of this framework to enable an extensive search. This guidance was utilised for this project, with PICOT elements tailored to align with functionality of each database (Aveyard, 2019).

The literature recommends using multiple databases when conducting a literature review to ensure all relevant results are captured (Coughlan and Cronin, 2021) (Aveyard, 2019) (Booth, Sutton and Papaioannou, 2016). Therefore, for this review, 3 databases were used: CINAHL, Internurse and SAGE. These databases ensured a comprehensive search (Aveyard, 2019) of empirical data, clinical practice perspectives and theoretical sources (Polit and Beck, 2021).

Limiters (inclusion and exclusion criteria) were applied to ensure results were relevant (Aveyard, 2019). Results were narrowed to include literature that was published within the last ten years, ensuring the review remained contemporary relevant (Coughlan and Cronin, 2021). Initial attempts to reduce this to the last five years produced limited results, so was expanded (Aveyard, 2019). Sources published in the English was also included, removing the requirement for translation (Coughlan and Cronin, 2021). The limiter of adult was initially introduced, however, this yielded zero results, so was removed. This limiter did remain important, meaning results were hand screened to ensure they focused on adult patients only (Aveyard, 2019) (Coughlan and Cronin, 2021). Patients within the community setting were an inclusion, with patients in other settings excluded. Use of clear limiters enhanced search precision, enabling retrieval of sources that directly contributed to answering the project question (Polit and Beck, 2021) (Aveyard, 2019).

The primary search was conducted through CINAHL, a database dedicated to nursing and healthcare sources, aligning with projects focused on clinical settings. Its advanced abilities provide structure to a database search (Aveyard, 2019). Challenges are encountered when excessive limiters are used, causing a reduction in results (Coughlan and Cronin, 2021) (Aveyard, 2019). This was evident during this search, when all PICOT elements with multiple limiters was attempted, producing minimal results. Searching was then attempted in stages with reduced limiters, starting with the population search, then adding each element search at a

time. This did produce more results; however, it also highlighted that the timeline element was impacting the number of results so was removed.

The timeline element was important, with its inclusion aimed at focusing on patients in the final stages of life, and as a focus for data extraction. It became evident that none of the literature focused specifically on this timeframe, instead discussed as the last weeks and months of life (Bowers et al., 2018) (Bowers et al., 2021). The last seven days of life were included through hand screening. This does highlight a gap in the literature on patients specifically having Anticipatory Prescribing in the last seven days of life (Bowers et al., 2018) (Bowers et al., 2021).

Through using a flexible PICOT framework technique (Booth, Sutton and Papaioannou, 2016) (Aveyard, 2019) twelve results were sourced from this method, with all twelve included for full screening.

PICOT elements	PICOT term	Synonyms
Population	Community patients	End of life care, community palliative care, community terminal patients
Intervention /Exposure	Anticipatory prescribing	Just in case medication, end of life prescribing, anticipatory medications
Comparison	Medications administered or medications waste, cost of wastage	Medication used, wasted medication, unused medication
Outcome	Cost implications of wasted medications	Cost of wastage, economic waste, cost effectiveness, maximising resources
Timeframe	Last seven days of life	Terminal care, last week of life, last days of life

Table 2.1 PICOT framework

The second search was conducted through Internurse, a database providing UK clinical practice articles, with sources not always available through academic databases (Coughlan and Cronin, 2021) (Aveyard, 2019). When using PICOT through Internurse, there was less opportunity for advanced searching and combination techniques (Aveyard, 2019). Attempts to the use the same PICOT framework (Table 2.1) proved ineffective, with zero results obtained when attempting to search for Anticipatory Prescribing waste.

The strategy was therefore adapted, with search terms broadened to be more specific to this database (Table 2.2), considered necessary with identified differences in database functionality and indexing (Aveyard, 2019) (Booth, Sutton and Papaioannou, 2016). However, this technique continued to introduce challenges; Population and Intervention produced relevant results, but other PICOT elements did not, which could be attributed to a lack of numerical literature in this database (Aveyard, 2019) (Polit and Beck, 2021).

The search continued, but the decision was made to focus on Population (n- 391) and Intervention (n- 125), with the other PICOT elements identified through hand screening of Population and Intervention results (n-516) (Coughlan and Cronin, 2021) (Aveyard, 2019). A final ten were chosen for full screening following abstract and title review (Aveyard, 2019).

PICOT Terms	Search Terms
Population	palliative care, end of life care, community palliative care, end of life care at home
Intervention/ Exposure	anticipatory prescribing, anticipatory medicines, just in case medicines

Table 2.2 Internurse Search Terms

The third search was conducted through SAGE (Table 2.3), a database of peer reviewed healthcare sources (Coughlan and Cronin, 2021). Like CINAHL, SAGE

supports combination searching. However, as a database it is more limited in subject indexing, making a systematic search more challenging (Coughlan and Cronin, 2021) (Aveyard, 2019). The search terms were adapted to fit the database, (Coughlan and Cronin, 2021; Aveyard, 2019). SAGE was effective when combined searching was built in stages, with Population and Intervention combined, and then Comparison added (n-35) (Aveyard, 2019) (Coughlan and Cronin, 2021). Outcome and Timeframe were not included as attempts made were unsuccessful, which could be attributed to reduced subject headings (Coughlan and Cronin, 2021) or inconsistencies with indexing of these elements (Aveyard, 2019). Outcome and Timeframe were sourced though hand screening of title and abstract, leaving eleven results (Coughlan and Cronin, 2021).

All database searches remained aligned with the original PICOT Framework (Table 2.1), but all required adaption for the specific database being used (Aveyard, 2019; Coughlan and Cronin, 2021). Adaptions were required for different reasons, but by remaining flexible, searching was not restricted (Aveyard, 2019) and a comprehensive search in each database was possible (Coughlan and Cronin, 2021).

PICOT Terms	Search Terms
Population	Community, community-based, end of life, palliative care, dying patients
Intervention / Exposure	anticipatory prescribing, anticipatory medicines, just in case medicines, end-of-life prescribing
Comparison	medication use, medication administration, medication wastage, unused medicines, cost OR financial impact

Table 2.3 SAGE Search

A total of 574 sources were removed during the hand screening process (Aveyard, 2019). This was time consuming and highlighted the restrictions of using different databases when focusing on a niche topic (Polit and Beck, 2021). Almost half of all results were then removed due to duplication (Bettany-Saltikov, 2016). Only one article needed to be removed due to full text not being available, leaving sixteen

results remaining for full screening (Appendix 1). Five studies were removed during full screening due to non-relevance to the project (Aveyard, 2019).

Of the remaining studies (n- 11) five were empirical, so appropriate for critical analysis using the Critical Appraisal Skills Programme tool (CASP, 2024). The CASP tool uses a systematic framework to evaluate quality, suitability, robustness and credibility of literature (Coughlan and Cronin, 2021). All empirical literature was appraised for its purpose and methodology, with a summary and then CASP analysis provided to ensure they demonstrated methodological rigour (CASP, 2024) (Aveyard, 2019) (Appendix 2).

The remaining six studies were non-empirical, with their inclusion within the literature review considered acceptable to support Anticipatory Prescribing discussions within clinical practice (Coughlan and Cronin, 2021) (Aveyard, 2019). Although these non-empirical sources are positioned lower in the hierarchy of evidence, their exclusion could result in a literature review that does not depict the realities of clinical practice (Aveyard, 2019).

Four pieces of grey literature were included, giving a total of fifteen sources for the literature review. Grey literature supports audit methodology, ensuring literature is included which depicts policy and guidance, something which may be lacking in database searches (NICE, 2002) (HQIP, 2021) (Aveyard, 2019) (Polit and Beck, 2021). The grey literature selected includes national clinical documents and local policies, ensuring inclusion of operational and strategic perspectives (Aveyard, 2019) (Booth et al., 2021). Local policy ensured literature depicted the local setting, whilst national literature ensured the review also explored national standards (Polit and Beck, 2021) (Aveyard, 2019). Due to the common absence of peer review, grey literature is classified further down the hierarchy of evidence, however, was still utilised as it provides insight into clinical practice (Aveyard, 2019). All grey literature was screened by the project lead to ensure relevance to the project, credibility of the source and date of publication, ensuring it was up to date (Polit and Beck, 2021) (Aveyard, 2019).

AP was analysed in greater depth using multiple types of evidence (Coughlan and Cronin, 2021). The empirical literature provided the foundations for the review with primary evidence being the basis for theme development (Aveyard, 2019) (Booth et al., 2021). Whilst the non-empirical literature complementing this with clinical practice perspectives and grey literature supported the methodology of audit, ensuring policy literature was incorporated (Aveyard, 2019) (Booth et al., 2021). This combined approach ensures findings from this literature review are grounded in empirical evidence, whilst remaining aligned with clinical practice and regulatory frameworks (Coughlan and Cronin, 2021) (Polit and Beck, 2021) (Aveyard, 2019). Through the use of different types of evidence, discussions on this niche topic will be enhanced (Polit and Beck, 2021).

2.2 Literature Review

Theme 1: Assessing the effectiveness of Anticipatory Prescribing

Although Anticipatory Prescribing is considered routine practice in end-of-life care, its effectiveness remains unclear (Bowers et al., 2018). This uncertainty can be attributed to different studies using different outcomes to measure effectiveness, such as if symptoms were controlled or if the patient had died in the place they wanted (Wilson and Seymour, 2017). This variation introduces challenges in drawing conclusions on how effective Anticipatory Prescribing is but also limits the ability to interpretate findings between studies (Bowers et al., 2023).

The reviewed literature reflects that simply having Anticipatory Prescribing in place does not determine its effectiveness. Bowers et al. (2023) conducted a systematic review and identified a lack of research on outcomes for patients having AP. It found that effectiveness is often assumed if patients have access to these medications, without consideration given to a patient's symptoms (Bowers et al., 2023). Consistent with these findings, Bowers et al. (2018), Bowers et al. (2024) and Morgan et al. (2023) discuss how medication use varied significantly, with medication waste also found.

Professional literature supports the importance of using an individualised Anticipatory Prescribing approach for Anticipatory Prescribing to be considered effective. Harris (2019) and Ritchie (2017) both promote that patients require regular review, ensuring Anticipatory Prescribing remains patient specific and suitable. This perspective aligns with NICE (2017) who advise that Anticipatory Prescribing is dependent on anticipated symptom burden for a particular patient, reviewed as needed. Likewise, GOJ (2022) recommend anticipated patient specific prescribing, avoiding a standardised approach. The benefit of a regular Anticipatory Prescribing review is further highlighted by Marie Curie (2025), who discuss that symptom requirements and subsequent patient requirements may change.

In summary, the literature highlights that Anticipatory Prescribing effectiveness is more than having anticipatory medications in place. But evident when in conjunction with professional judgement, individualised assessments, and regular review (NICE, 2017) (GOJ, 2022) (Harris, 2019) (Ritchie, 2017) (Marie Curie, 2025).

Theme 2: The timing of AP

For clinicians, deciding a patient's prognosis can be difficult, with this decision having implications on when Anticipatory Prescribing is implemented (NICE, 2017) (Marie Curie, 2025). In the study by Bowers et al. (2021) Anticipatory Prescribing was found to be frequently in place weeks or months before required due to difficulties with prognostication. Although a proactive approach can ensure timely symptom control (NICE, 2017) (GOJ, 2022), being too proactive can introduce the risk of medications being wasted (Bowers et al., 2018) (Bowers et al., 2024). NICE (2017) and the GOJ (2022) suggest that Anticipatory Prescribing must coincide with an initial patient specific assessment, with medication selection based on individual need, instead of a routine process. This shows the difficulties in ensuring Anticipatory Prescribing is in place when it is needed but also minimising avoidable waste (Bowers et al., 2021).

The literature suggests that Anticipatory Prescribing timing can be affected by prognostic uncertainty and prescriber confidence, introducing timing variation between prescribers (Harris, 2019) (Ritchie, 2017) (Bowers et al., 2021) (Bowers et al., 2023) (Wilson and Seymour, 2017). Prescriber confidence can be enhanced through effective communication within a supportive team, assisting clinicians to more accurately determine prognosis and Anticipatory Prescribing timing (Wilson and Seymour, 2017). Evident in the community setting, when the original need for Anticipatory Prescribing is identified, this is usually recognised by health care professionals reviewing patients and updating the prescriber (Bowers et al., 2023) (Latham and Nyatanga, 2018). This recognises the importance of multidisciplinary collaboration and patient review to strengthen Anticipatory Prescribing (Harris, 2019) (Ritchie, 2017).

Uncertainty in prognostication is displayed in the systematic review by Bowers et al. (2023) who report substantial disparity in Anticipatory Prescribing timing, suggesting clear universal guidance on when to prescribe is not in place. NICE (2017) guide clinicians on Anticipatory Prescribing timing based on local protocol, individualised patient assessment and clinical expertise. The guidance from GOJ (2022) aligns, however also advises GSF coding, with appropriate patients being GSF amber or GSF red, recognising the challenge of this when uncertainty in prognostication is present.

In summary, it has been shown that Anticipatory Prescribing timing is multifaceted, with many aspects influencing this decision (Bowers et al., 2021) (Harris, 2019) (Wilson and Seymour, 2017) (Ritchie, 2017) (Bowers et al., 2023). The literature consistently promotes the importance of individualised assessment into this decision (GOJ, 2022) (NICE, 2017).

Theme 3: Anticipatory prescribing and its administration

Throughout the literature review, it became apparent that variation in prescribing and administration is present.

In the study by Bowers et al. (2018) it was reported that most patients were prescribed a standardised medication regime which addresses the most common symptoms at the end of life, despite professional guidance encouraging individualised prescribing NICE, 2017) (GOJ, 2022).

Harris (2019) suggests that clinicians should prescribe dependant on the symptoms that are expected for an individual patient. Likewise, Robertson (2024) advises caution in standardised prescribing, with blanket prescribing for all influencing the clinician's ability to respond to individual patient requirements. Both perspectives therefore align with professional guidance (NICE, 2017) (GOJ, 2022).

This is further supported by Morgan et al. (2023) and Bowers et al. (2023) who found that patients will experience different symptoms at the end of life, which will require different medication regimes and administration rates to achieve symptom control. This demonstrates how blanket prescribing, with all patients receiving the same doses of the same core category medicines may not be appropriate for all (GOJ, 2022) (NICE, 2017) (Bowers et al., 2023) (Morgan et al., 2023).

The literature highlights significant variation in medication administration, with some discussing medications being regularly administered, whilst others discuss limited use (Morgan et al., 2023) (Bowers et al., 2018). Drawing conclusions from the literature introduces difficultly, with most lacking discussion on symptom assessment or the decision-making process for medication administration (Bowers et al., 2023) (NICE, 2017). This is evident when considering low medication use, which could be present as the patient is asymptomatic, or that their symptoms were well controlled, or Anticipatory Prescribing was not appropriate for that patient (Marie Curie, 2025) (GOJ, 2022) (NICE, 2017).

Differences in medication administration between studies could also be due to the individuality of patient symptom burdens and the challenge in pre-empting what medications are required (Morgan et al., 2023) (Bowers et al., 2021). This

emphasises the importance of a patient specific prescribing approach, in contrast to blanket prescribing (GOJ, 2022) (NICE, 2017).

Theme 4: Medication waste and prescribing efficiency

AP is linked to medication waste, with medications prescribed and never used (Morgan et al., 2023) (Bowers et al., 2021).

AP was examined by Morgan et al. (2023) who in their quantitative study reported a significant amount of waste and subsequent cost of this way of prescribing. With financial constraints in healthcare, avoidable medication waste could mean funding to other areas is reduced (NHS England, 2015) (Drummond et al., 2015). Additionally, Bowers et al. (2023) identified a lack of consensus on prescribing efficiency, alongside a noticeable gap in the literature examining Anticipatory Prescribing cost. Taken together, prescribing efficiency for Anticipatory Prescribing involves ensuring a patient's symptoms are controlled by ensuring decisions remain patient specific, with consideration given to reducing avoidable waste (NICE, 2017) (Morgan et al., 2023) (Bowers et al., 2023) (Drummond et al., 2015).

Medication waste can be due to many reasons. When prognostication is difficult, earlier implemented is seen (Bowers et al., 2021), which does lead to an increased risk of waste. Likewise, when a proactive approach is used, patients will have rapid access to these medicines, but again they more likely result in waste (Morgan et al., 2023) (Bowers et al., 2021).

This highlights the need to balance proactive prescribing, with a cost-effective use of resources. However, the non-use of medications does not always mean that Anticipatory Prescribing was inappropriate. It may indicate that the patient died being asymptomatic, with medications therefore not required. The interpretation of data therefore must include consideration on its context (GOJ, 2022) (NICE, 2017) (Bowers et al., 2018) (Bowers et al., 2021) (Bowers et al., 2023) (Morgan et al., 2023).

Theme 5: Anticipatory Prescribing documentation and symptom assessment

Clear and concise documentation of symptom assessment with a transparent clinical rationale is central to evaluate current prescribing practice (GOJ, 2022) (CQC, 2025) (NICE, 2017). Nevertheless, it was still found to be lacking in studies by Bowers et al. (2018) and later by Bowers et al. (2024), indicating that documentation continues to remain limited, even with updated guidance supporting its importance (GOJ, 2022) (NICE, 2017). This is also consistent with reviewed literature who agree that effective documentation and patient review ensure Anticipatory Prescribing remains an individualised approach (Marie Curie, 2025) (Harris, 2019) (Ritchie, 2017).

When documentation is lacking it can impact more than the quality-of-care patients receive. It will also limit the ability to review the patient's symptom burden or why medications were chosen (Marie Curie, 2025) (NICE, 2017) (GOJ, 2022). This demonstrates the importance of Anticipatory Prescribing documentation, ensuring patients receive safe and effective care, but also enables the ability to assess prescribing practice (CQC, 2025) (NICE, 2017) (GOJ, 2022).

In summary, the literature has shown that effective Anticipatory Prescribing is reliant on clear and concise documentation, individualised assessment, multidisciplinary communication and ongoing review (CQC, 2025) (GOJ, 2022) (NICE, 2017).

This chapter has critically reviewed existing literature on Anticipatory Prescribing within the community palliative care setting. The PICOT framework was used to guide the search, with different types of literature included to ensure a broad understanding of AP. Through thematic analysis, five literature themes were established. Within these themes it was shown that individualised prescribing was commonly discussed, alongside the factors which affect it, such as clinician decision making, communication between clinicians and the challenges of prognostication

(GOJ, 2022) (NICE, 2017) (Morgan et al., 2023) (Bowers et al., 2021). A lack of literature relating to cost and associated waste, combined with inconsistencies in administration, quality of documentation and how a patient's symptoms are assessed did make the evaluation of Anticipatory Prescribing challenging (Morgan et al., 2023) (Bowers et al., 2023).

Notably, most empirical literature was published by Bowers and colleagues. However, all studies were critiqued to ensure methodological rigour (Aveyard, 2019) Even so, this dominance of author does have the potential to limit the range of perspective. It also indicates that the evidence base on this topic is limited, which further emphasises the need to assess Anticipatory Prescribing within the local community palliative care setting (Bowers et al., 2023). The next chapter will explore the methodology used for this project.

Chapter 3: Project Design

This chapter will begin with a discussion on the question, aim and objectives that underpin this project. It will then explore clinical audit methodology, being most aligned with this project. Next the philosophical paradigm of positivism will be discussed. The chapter will then review the sampling technique, data collection and data analysis methods used for this project. Finally, the chapter will finish by looking at quality assurance and ethical issues that arose within this project.

The project question and aim were formulated to gain insight into Anticipatory Prescribing trends in Jersey and to determine whether current practice aligns with NICE (2017) and GOJ (2022). By having a clear question and aim, the project focus is set, which ensures that data extraction and analysis remain aligned (Polit and Beck, 2021). The objectives guide this project, establishing clear goals to answer the project question. A clinical audit design will enable evaluation of Anticipatory Prescribing in Jersey and its alignment with policy (NICE, 2017) (GOJ, 2022), highlighting areas for service improvement, making it methodologically appropriate for this project (Healthcare Quality Improvement Partnership, 2021) (HQIP) (Tidy, 2024) (Office for Health Improvement and Disparities, 2020) (OHID).

3.1 Theoretical basis

While audit is not usually considered in relation to a research paradigm. The same philosophies can be seen to underpin an audit project and therefor influence the design. The nature of the project question is underpinned by a positivist philosophy (Park, Konge and Artino, 2020). This philosophical approach is linked with the hypothetico-deductive model of science, using objective data to produce findings that can be replicated (Park, Konge and Artino, 2020). It assumes a phenomenon can be observed and analysed, with results giving insight into trends (Polit and Beck, 2021). In this study, Anticipatory Prescribing is the phenomenon, observed

through patients prescribing records, with data collected and analysed, with trends then highlighted to support quality improvement (Polit and Beck, 2021).

This paradigm also aligns with quality improvement philosophy, in which clinical practice can be assessed objectively and alignment determined (Batalden and Davidoff, 2007). Deductive reasoning further supports this, consistent with audit methodology aimed at quality improvement (Park, Konge and Artino, 2020).

Clinical audit dates to the times of Florence Nightingale (Nightingale, 1863) who would collect and analyse data to enhance the nursing care that patients received. Overtime clinical audit has evolved and become a tool used regularly in healthcare, now considered a fundamental element of quality improvement and healthcare governance (NICE, 2002).

A methodology that aligns with positivism and best fits this project is quantitative (Park, Konge and Artino, 2020). Alternative philosophical views, such as the naturalistic philosophy would not align with this project, being more suited to qualitative studies that seek to explore patients' experiences or perspectives (Polit & Beck, 2021).

3.2 Methodology

HQIP (2020) describe clinical audit as a quality improvement tool (Gasoma, 2022). Its ability to benchmark practice against a standard (NICE, 2023) means care gaps are highlighted (Ferguson, Vaismoradi and Glarcher, 2025) (Tidy, 2024) and services are continually improved (Limb et al., 2017). This project will specifically use a retrospective quantitative observational audit methodology (Ferguson, Vaismoradi and Glarcher, 2025) (NICE, 2002) (Limb et al., 2017). Benefits include it being time and cost-effective, when compared to alternative methods (De Sanctis et al., 2022). It can also promote team performance, by encouraging shared goals for service improvement (Ferguson, Vaismoradi and Glarcher, 2025). Through

improving practice, patient experience, outcomes and safety all improve (Limb et al., 2017) (HQIP, 2021).

Limitations include an increased risk of information bias, being reliant on data being complete, consistent and correct (Gershon et al., 2021). When data is missing or poorly recorded, it can affect the precision of data extraction and subsequently have consequences on the project findings (Polit and Beck, 2021). A retrospective methodology also prevents causal inferences, which can impact how data is interpreted (OHID, 2020). However, it is an important characteristic of audit methodology, aligning with the project aim of assessing the local setting against policy, and not to assess change over time (HQIP, 2020) (NICE, 2002) (Limb et al., 2017).

The audit cycle uses a five-step systematic approach; preparation, selecting criteria, measure performance, make improvements and sustaining improvements (Tidy, 2024) (Ferguson, Vaismoradi and Glarcher, 2025) (Limb et al., 2017). It ensures that audits are not just about data extraction, but includes change and reaudit to facilitate quality improvement, instead of being simply a descriptive activity (HQIP, 2021).

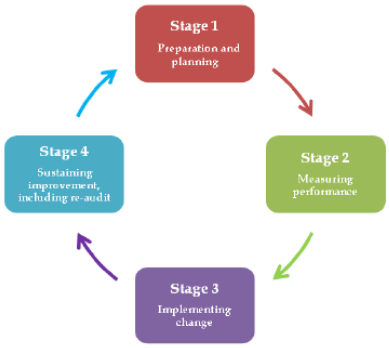


Figure 1 Stages of Audit Cycle

Other project designs were considered; however, their methodologies did not align with the project's aim and objectives. Primary empirical research is generally used to generate new knowledge on a subject (HSE, 2025) (Polit and Beck, 2021), not

being suitable as this project was aimed at exploring Anticipatory Prescribing practice in Jersey and alignment with policy. Likewise, a systematic review would produce evidence that has already been published (Gough, Oliver & Thomas, 2017) but would likely lack literature on clinical practice within Jersey, highlighting that neither of these methods were suitable.

3.3 Sample

Patient data was extracted from EMIS; a shared community healthcare database in Jersey, focusing on patients under the care of the SPCT, who in their last seven days of life had anticipatory medications in place. All patient records who met the inclusion criteria and had a recorded date of death within the defined time period were collated to produce the sampling frame, with this method being consistent with guidance from Melnyk, Morrison-Beedy and Cole (2015) for selecting an appropriate audit population.

Purposive sampling was used. It is a flexible approach, that ensures patients included have exposure to the topic (Tajik, Golzar and Noor, 2024). It is a non-probability method (Stratton, 2023) with data that is collected not intended to be generalisable, but on a specific population (Coughlan and Cronin, 2021) (Stratton, 2023). As an audit results from this study can be therefore considered representative of measuring how the local service, community palliative care in Jersey, is measuring against the policy guidance (Stratton, 2023).

The sampling criteria for the secondary data sample was pre-determined to include:

Inclusion criteria:

- Adults (18+ years) under the care of the community SPCT
- Patients in the last seven days of life
- Patients who were prescribed anticipatory medications

Exclusion criteria:

- Children (under 18 years)
- Patients who are known to the service for less than 7 days
- Patients who do not have anticipatory medications prescribed

Limitations of this sampling technique include its risk of selection bias (Tajik, Golzar and Noor, 2024). To reduce this risk, data from all patients who met sampling criteria within the sampling frame were considered for inclusion (Polit and Beck, 2021) (HQIP, 2021). Records that had incomplete or missing data were removed to enhance data integrity (Polit and Beck, 2021).

A sample size of 30 patient records was identified as achievable and sufficient for descriptive data analysis (Coughlan and Cronin, 2021). The original plan was to use a one-month period and extend as needed to capture 30 patient records. However, less patient records were eligible for inclusion than expected, meaning records were reviewed over a nine-month period. By adhering to strict inclusion criteria in all reviewed records, the risk of selection bias was reduced (Polit and Beck, 2021) (HQIP, 2021). This was further minimised by the project lead being absent from clinical practice throughout all months of reviewed records, ensuring no influence over data selection (Polit and Beck, 2021).

3.4 Methods

3.4.1 Quantitative data collection methods

To collect data for this project, a retrospective observational patient record review was utilised (Limb et al., 2017) (NICE, 2002) (HQIP, 2021). It is a non-interventional approach, involving reviewing secondary data through patient records to analyse previous events (De Sanctis et al., 2022). Data extracted from EMIS included patients' prescriptions and administration records, focusing solely on data from the last seven days of life.

Data collected reflected the project objectives; what medications were administered and their frequencies, what medications were wasted, the most wasted, and the

total cost of wastage per patient. Collection of previously logged patient data ensured the local setting could be analysed objectively, in accordance with audit methodology (HQIP, 2021) (Limb et al., 2017) (NICE, 2002).

Talari and Goyal (2020) highlight limitations with retrospective reviews, recognising that data from patients' medical records was not originally inputted for research or audit purposes, which could lead to the risk of unknown biases. Talari and Goyal (2020) state that a prospective study is the only way to give true clarity on factors which effect clinical practice (Talari and Goyal, 2020). However, this would not be appropriate for this project with the difficulties in predicting when patients are within the last seven days of life (Higginson et al., 2006).

Prospective reviews also have limitations, having the potential to influence team members behaviours and the quality of their documentation records if they are aware these are being reviewed (HSE, 2025). A retrospective design was therefore considered methodologically suited to this project, being able to address the aim and objectives (HQIP, 2021) (Limb et al., 2017) (NICE, 2002).

A predetermined specific and set criterion of data was identified before data extraction, using audit measures and data extraction points to ensure the process was systematic and only required data was extracted (Polit and Beck, 2021). By establishing the criterion before extraction, the project was focused, ensuring a logical and reproducible method was applied to all records reviewed (Coughlan and Cronin, 2021) (HQIP, 2021).

Data was systematically extracted by the project lead, enabling continuity and consistency in all included patient records (Hammer et al., 2019). All included patient records were reviewed individuality to ensure they met the strict inclusion and exclusion criteria. Data was then extracted using a structured proforma (Appendix 3), which meant that data could be inputted directly into Microsoft excel (Creswell and Creswell, 2023). This process reduced the risk of human error, minimised bias enhanced objectivity and enabled effective data management (Polit

and Beck, 2021) (Creswell and Creswell, 2023). Use of a proforma in this study also compliments the positivism paradigm, through use of objective data (Polit and Beck, 2021).

A pilot was conducted, with a review of five patient records, testing functionality of the data collection proforma and giving guidance on time taken per patient review (Polit & Beck, 2021). It also highlighted if elements of the proforma were unclear, so adjustments could be made prior to data extraction (Coughlan and Cronin, 2021) (Polit and Beck, 2021). This systematic method meant data extraction was standardised, supporting the projects' reliability (Polit & Beck, 2021).

After completion of the pilot, minimal refinements ensured its appropriateness for full data collection (Polit and Beck, 2021). The use of a pilot when conducting clinical audit is recommended, ensuring errors are minimised and results are more reliable, ensuring good quality auditable data is sourced (HQIP, 2021) (Polit and Beck, 2021).

3.4.2 Qualitative narrative documentation

A review of the prescribers' clinical notes was included to support understanding of local prescribing practice. Qualitative narrative data was extracted, when access was available, which included accessing consultation notes to review discussions with patients and clinician observations, in particular focusing on prescriber rationale, patient's prognosis, current and anticipated symptom burden and the patient's wishes for their care. The GP clinical notes were inaccessible due to data access restrictions post patient death. However, the Hospice prescriber's narrative clinical notes were available. By including the qualitative narrative documentation, it added context to the quantitative data (Polit and Beck, 2021) and supported the aim of the project; to assess whether the local setting supports individualised prescribing (NICE, 2017) (GOJ, 2022).

3.5 Data analysis methods

Descriptive statistical analysis was used, enabling numerical data to be summarised, before providing an objective description of the sample (Coughlan and Cronin, 2021) (Bhandari, 2023). Descriptive statistical analysis aligns with clinical audit methodology, analysing data to give a snapshot of a service (Bhandari, 2023) and assess alignment, vital for quality improvement (Kaur, Stoltzfus and Yellapu, 2018). Descriptive analysis also aligns with a positivistic paradigm in identifying trends from objective data (Polit and Beck, 2021). With the aim to evaluate the service and not to not make comparisons or results applicable to wider society, inferential statistics are not appropriate so will not be used (Aveyard and Sharp, 2017). Descriptive statistics did allow for the salient features of the data to be identified (Bhandari, 2023) (Kaur, Stoltzfus and Yellapu, 2018). With measures of central tendency used to give averages to further depict and interpret the data (Bhandari, 2023).

To answer the audit question and aim all medication categories were identified (Polit and Beck, 2021). These were then analysed for frequency of prescription, their administration and their waste (HQIP, 2021). Analysis of the categories did provide insight into broader prescribing trends, however, were unable to give insight into whether prescribing was individualised (NICE, 2017) (GOJ, 2022). For prescribing to be considered individual, prescribing decisions must be specific to a patient and their needs, instead of generalised prescribing for all end-of-life patients (Marie Curie, 2025) (Bowers et al., 2018). Therefore, through assessment of individual medicines and a review of the qualitative narrative documentation a more comprehensive assessment of alignment with policy could be determined (HQIP, 2021) (Bowers et al., 2021). The qualitative narrative documentation was not analysed by recognised qualitative methodology but instead used to add clinical context and illustrate examples of individualised prescribing within the local setting (Polit and Beck, 2021).

Assessing the cost of waste per patient meant definition of cost per medication vial through the Government of Jersey prescribing list. Once this was established, percentages could then be used to analyse the findings, identifying the percentages of what was administered, wasted and the total cost for each patient. Percentages were useful in analysing the dataset, giving clarity to results, with variation in the number of medications prescribed for individual JIC boxes, absolute figures would therefore not have provided accurate comparisons between patients (Polit and Beck, 2021) (Kaur, Stoltzfus and Yellapu, 2018), aligning with recommendations for clinical audit analysis (HQIP, 2021).

The total wastage cost for each patient was then determined by comparing total cost of each patient's JIC box before use, and then what was remaining after the patient had died (NHS England, 2015). Significant findings have been presented using tables and charts, providing visual interpretation of findings (Polit and Beck, 2021).

3.6 Quality Assurance and Ethical issues

This clinical audit was guided by Beauchamp and Childress's (2013) core ethical principles of beneficence, non-maleficence and justice. As a retrospective clinical audit, formal ethical review by the Jersey Health Research Ethics Committee was not required (HQIP, 2021). However, this project was reviewed and approved by the RGU School of Health Ethical Review Panel and was registered with the Clinical Audit Team at Health and Care Jersey. A risk assessment has been completed to highlight and address ethical issues within the project (Appendix 4).

Beneficence

Beneficence, the ethical principle that guides clinicians to maximise benefits for patients (Beauchamp and Childress, 2013) guided this projects' aim and objectives (HQIP, 2021), by informing improvements in prescribing practice to reduce waste and subsequent costs for future patients (HQIP, 2021). Therefore, this project was

carefully planned to enhance current local services through exploring prescribing practice (Coughlan and Cronin, 2021), and in completing this review the aim was to make the service more economical, so that the service can grow with the expanding population (Government of Jersey, 2023).

Non-maleficence

The ethical principle of non-maleficence means clinicians do not cause harm and minimise avoidable risk (Beauchamp and Childress, 2013). This aligns with clinical audit, assessing a clinical setting against policy to make recommendations for quality improvement (HQIP, 2021).

Potential harm to patients, their families, the organisation and colleagues was considered. Even though this project was not research, data protection and the confidentially of patients was in place (Creswell and Creswell, 2023) (Nursing and Midwifery Council, 2018). Patient anonymity was maintained, minimising the risk of others recognising patient's identity from results, including patient's family (Creswell and Creswell, 2023). In accordance with the Data Protection (Jersey) Law (2018), patients' data was coded for data storage purposes, with patients assigned a number to identify extracted data.

The approved data management plan for this project outlined that all extracted data will be handled and stored as per Data Protection (Jersey) Law (2018), ensuring trust is maintained between the project lead, Jersey Hospice Care and the Jersey Faculty of Health Education. Data will be destroyed 10 years after its last use for this project (RGU, 2025). The project leads role grants access to private patients notes (De Sanctis et al., 2022). However, patient consent cannot be assumed for access to these notes for the purposes of Clinical Audit, therefore, permission from the Lead of Jersey Hospice Care was approved to access these notes for the purposes of clinical audit (De Sanctis et al., 2022). A clear dissemination plan ensured results are handled, distributed, stored and destructed correctly (Creswell and Creswell, 2023). Having an awareness and understanding of

the Declaration of Helsinki, local policies and laws on data protection were necessary to ensure ethical standards were met and maintained throughout this project (De Sanctis et al., 2022).

Justice

The ethical principle of justice aligns with the aim of this clinical audit, as through assessing prescribing practice at a local level, recommendations may be made to promote effective resource use, without limiting access (Beauchamp and Childress, 2013) (NICE, 2017) (CQC, 2025).

All patient records who met inclusion criteria within the defined time period were included. This meant that all had an equitable opportunity to be included (Polit and Beck, 2021). For this project, participant consent and participant recruitment processes were not required as it was a retrospective design (NICE, 2020). The findings and subsequent recommendations from this clinical audit will be shared with Jersey Hospice Care and the Jersey Faculty of Health Education Team, to improve the service and promote responsible use of resources (HQIP, 2021) (Limb et al., 2017).

Reliability in this clinical audit was enhanced through use of a proforma (Polit and Beck, 2021), whilst validity was reinforced through ensuring all data was extracted from EMIS (Polit and Beck, 2021). As this project aligns with the positivism paradigm, both reliability and validity were fundamental, ensuring findings could be used to influence quality improvement (Polit and Beck, 2021).

3.7 Conclusion

This chapter commenced with identification of the project question, aim and objectives, demonstrating how they align with the project design. Methodology was then explored, with a clinical audit recognised as allowing for objective data to assess alignment with policy, underpinned by the positivist paradigm (Polit and Beck, 2021). Purposeful sampling was then discussed, establishing importance for

strict inclusion and exclusion criteria to ensure relevance to the target population (Polit and Beck, 2021). Data collection methods were then described, detailing the process of data extraction through a retrospective observational record review, recognising the importance of using a proforma for the project's trustworthiness (Polit and Beck, 2021). Descriptive statistical analysis was then used to highlight trends (Polit and Beck, 2021), giving clarity on prescribing, administration, waste, cost and alignment with policy. Finally, quality assurance and ethical issues were explored using Beauchamp and Childress (2013) core ethical principles, ensuring all ethical issues were considered and that service improvement remained the goal of this project (HQIP, 2021).

Chapter 4: Findings Chapter

This chapter will discuss the findings that arose from this clinical audit. It will aim to address the aim and objectives of the project, including the core Anticipatory Prescribing medication categories, the individual medications prescribed, what medications were administered, what was wasted and how much did this cost, with consideration also given to the different prescribing sources. The data extraction process strongly focused on findings that aligned with the assessment of alignment with GOJ (2022) and in particular NICE (2017, p.13) Quality statement 3 who suggest "adults likely to require symptom control in the last days of life should receive anticipatory medicines with individualised indication, dosage and route of administration"

4.1 Record recruitment

Patient records were manually screened for eligibility. 30 patient records who met inclusion and exclusion criteria formed the audit sample (Table 1). Screening began by reviewing patient records who had a recorded date of death from 1st June 2025 and continued through until the end of February 2026. All quantitative data was extracted from the JIC paperwork, whilst qualitative data was sourced from the prescribers' clinical notes. All types of data were extracted from EMIS. Many reviewed patient records were excluded during the screening process, due to incorrect coding and missing data.

4.2 Characteristics of Sample

The audit sample consisted of 60% male patients (n=18) and 40% female patients (n=12), aged between 46 to 96 years (mean age 79 years, SD ±13.5). Most patients were older (over 60 years), with two younger patients (46 and 49 years). Most patients died from Cancer (n=21), with other causes of death listed as conditions such as stroke and dementia. All patients died with the community setting, with most dying within their own home (n=29, 96.7%) and one patient

within a residential care home. This patient was included as they met inclusion criteria, and their data was available for extraction.

Days under the care of the SPCT ranged from 7 to 1094 days (mean 138.1 days, median 73 days, SD ±204.3). The data showed that some patients were known to the service only in the weeks before death, whilst seven patients (23.3%) were supported for more than seven months, and one patient (3.3%) was known for almost 3 years. This outlier gives explanation to the variation between the mean and median, which has elevated the average number of days.

The sample characteristics (Table 4.1) enhance the understanding of the findings by providing context to the data. Differences in the cause of death and the time known to the SPCT can impact prescriber decision making and Anticipatory Prescribing patterns (GOJ, 2022) (NICE, 2017). For example, when patients are known for a long period before death, the team will have more time to plan for the end of life through continued review of the patient, compared to patients only known to the service for a short period (NICE, 2017) (GOJ, 2022). Inclusion of this data will therefore enable findings to be analysed in greater depth, introducing context, with consideration given to individual patients, their disease and its trajectory.

Variable	Result
Number of patients	30
Mean age	79 years
Age range	46–96 years
Male	18 (60%)
Female	12 (40%)
Died at home	29 (96.7%)
Died in care home	1 (3.3%)
Mean days known to SPCT	138 days
Range days known to SPCT	7–1094 days

Table 4.1: Participant Demographics for Data Inclusion

4.3 Frequency of Standard Anticipatory Medication Categories Prescribed

Data was extracted to examine the core Anticipatory Prescribing medication categories (Table 4.2). This data may also provide insight into individualised prescribing, whether prescribing locally is patient specific, or if all patients are prescribed the standard core categories (NICE, 2017) (GOJ, 2022).

The findings show that a combined total 129 medications from the core Anticipatory Prescribing categories were prescribed to patients within the audit sample. The most prescribed core categories were anti-emetics (28.7%), followed by analgesics (24.8%), with then the anti-secretory and anxiolytics being equal (23.3%) (Table 2).

Medication Category	Frequency (n)	Percentage (%)
Analgesia	32	24.80%
Anxiolytic	30	23.30%
Anti-secretory	30	23.30%
Anti-emetic	37	28.70%
Total	129	100%

Table 4.2: Anticipatory medication core categories prescribed

When the totals of each core medication category were analysed, it showed that all frequencies totalled 30 and above, which suggested that all patients were prescribed all four core category medications (Table 4.2). The category prescribing of analgesia (n=32) and anti-emetics (n=37) did however occur more times than the number of patients, which would imply that some patients may have been prescribed more than one medication from a core category.

On further analysis into this finding, it was found that five patients from the audit sample were prescribed more than one medication from the anti-emetic category (16.7%), whilst two patients (6.67%) were prescribed an additional analgesic medication. This finding shows that not all prescriptions were limited to the same standard core categories medication combinations that are usually implemented (GOJ, 2025).

Next, a patient level analysis was conducted to gain a more detailed understanding of the core category findings (Table 4.3), to determine if all patients were prescribed all four core medication categories.

Medication Category	Patients Receiving Category (n=30)	Percentage (%)
Analgesia	30	100%
Anxiolytic	30	100%
Anti-secretory	29	96.70%
Anti-emetic	30	100%

Table 4.3: Patient level analysis of medication categories prescribed

This shows that all patients were prescribed an anti-emetic, an anxiolytic and an analgesic medicine, but one patient was not prescribed an anti-secretory medicine, with this patient having a cause of death listed as motor neurone disease (MND). This finding was important. Data in table 4.2 had initially suggested that all 30 patients were prescribed all categories, but on further analysis, it showed that one patient with a diagnosis of prostate cancer was prescribed two anti-secretory medicines, whilst the patient with MND was prescribed none.

Data from table 4.2 therefore shows the total prescriptions, explaining why the anxiolytic and anti-secretory medications accounted for the same frequencies. This does show that for some patients within the audit sample, prescribing was tailored to their disease (NICE, 2017) (GOJ, 2022).

4.4 Frequency of individual medicines prescribed

Next, data was extracted to explore the prescribing frequency of individual medications. The aim was to collect data to examine what specific medications were prescribed within the local setting. Through exploring this data, clarity on individualised prescribing may be achieved if variation in medication choice is shown (NICE, 2017) (GOJ, 2022). The collection of this data will also promote understanding of local prescribing practice, establishing the medication preferences of local prescribers.

Table 4.4 illustrates all individual medications prescribed and their frequencies. Looking in more detail at the core category individual medications to assess for variation in medication choice; Morphine was the most frequently prescribed (n=20), whilst Oxycodone was prescribed much less (n=7). For the anti-emetics, Levomepromazine (n=18) was the most prescribed, compared to Cyclizine (n=4) and Haloperidol (n=11). The only anti-secretory prescribed was Glycopyrronium (n=29), whilst the only anxiolytic prescribed was Midazolam (n=30), with both these medications being the most common overall individual medications prescribed.

Individual Medication	Frequency (n)	Percentage (%)
Morphine	20	21.70%
Midazolam	30	32.60%
Glycopyrronium bromide	29	31.50%
Levomepromazine	18	19.60%
Haloperidol	11	12.00%
Oxycodone	7	7.60%
Cyclizine	4	4.30%
Dexamethasone	4	4.30%
Levetiracetam	2	2.20%
Parecoxib	2	2.20%
Alfentanil	1	1.10%
Metoclopramide	1	1.10%
Tranexamic acid	1	1.10%
Hyoscine butylbromide	1	1.10%

Table 4.4: Frequency of individual medicines prescribed

All anticipatory medications prescribed were included within quantitative data extraction. For certain patients (n=5) this included medications outside of the core categories e.g. Parecoxib and Dexamethasone. This finding shows that prescribers do go outside the scope of the four core categories, with this decision based on clinical need (GOJ, 2022) (NICE, 2017). The remaining patients (n=25) were prescribed only the core category medications.

4.5 Medication Administration, Waste and Cost

Data was next extracted to evaluate what medications were administered, what medications were wasted and how much did this cost. The extraction of data on medication vial counts were collected to show administration totals overall, but also within the last seven days, with this timeframe being pertinent to this project. This data was important, being able to analyse what was used, and not just prescribed, can enhance justification of why Anticipatory Prescribing should be available to all who may require (GOJ, 2022) (NICE, 2017). If high levels of administration are shown, data will support how patients benefit from these medications, enhancing symptom control within the dying phase (GOJ, 2022) (NICE, 2017). This data will also acknowledge the financial impact of local prescribing practice, through collecting data on administration and waste, the cost of Anticipatory Prescribing can be explored.

Measure	Total
Total vials prescribed	2,641
Total vials administered	1,442
Total vials wasted	1,199
Total vials administered in last 7 days	766
Total cost prescribed	5,666.35
Total cost wasted	2,812.74

Table 4.5: Overall Medication Administration, Waste and Cost

In total, 2,641 medication vials were prescribed to patients within the audit sample. The total amount of vials administered was 1,442 (54.6%) (Table 4.5), with 776 vials administered within the last seven days of life (53.12%) (Table 4.6). This finding shows that just over half of all vials prescribed were administered, and again over half of all administered were used in the last seven days of life. This suggests that as the end-of-life approaches, the need for anticipatory medications and symptom control increased, due to increased use (53.12%) within this timeframe (GOJ, 2022) (NICE, 2017).

Medication	Vials Administered in Last 7 Days
Morphine	310
Midazolam	228
Glycopyrronium bromide	109
Levomepromazine	67
Haloperidol	33
Oxycodone	19

Table 4.6: Medication administered in the last seven days of life

Table 4.6 illustrates that Morphine was the most frequently administered medication in the last seven days of life (n=310), followed by Midazolam (n=228) and Glycopyrronium (n=109). The high incidence of analgesic use, which is commonly used in symptom control for pain or breathlessness (GOJ, 2022) (Morphine n=310, Oxycodone n=19) indicates that this symptom was prevalent at the end of life for patients within the audit sample (NICE, 2017).

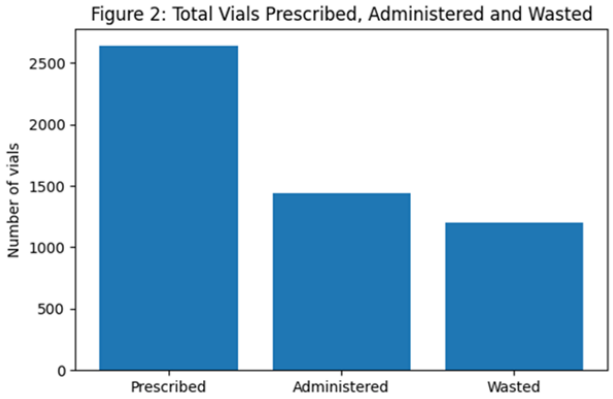
The anti-emetic medications were less commonly administered (Levomepromazine n=67, Haloperidol n=33), even though anti-emetics were the most frequently prescribed core category medicine (Table 2), which would suggest that this symptom was less commonly experienced in the last seven days of life, but was regularly anticipated by prescribers (GOJ, 2022) (NICE, 2017).

Table 4.7 suggests that the total amount of wasted medication vials was 1,199, which was 45.4% of all prescribed medicines. Medication waste was found to have occurred in all the core categories and individual medications.

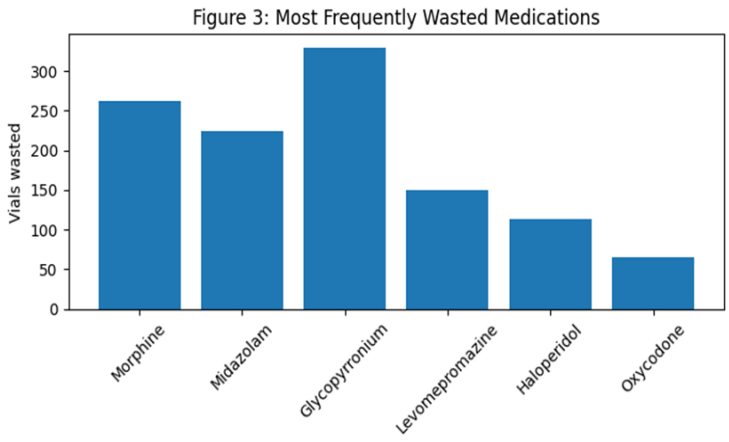
Medication	Total Vials Wasted	Cost Wasted (£)
Morphine	263	207.77
Midazolam	224	103.04
Glycopyrronium bromide	330	594
Levomepromazine	150	301.5
Haloperidol	113	722.07
Oxycodone	65	143

Table 4.7: Wasted medications and total cost of waste

The total cost of all medication waste was £2,812.74 (mean waste cost £93.76 per patient, median £79.19), in comparison to the total cost for all prescribed medications - £5,666.35 (Table 4.5). This illustrates that 49.6% of the total cost of all prescribed medications resulted in waste (Figure 2). The cost of medications varied significantly, with some prescriptions costing substantially more than others, explaining the increased mean, in comparison to the median.



The most frequently wasted individual medication was Glycopyrronium (n=330) with a total waste cost of £594 followed by Morphine (n=263) costing £207.77 and Midazolam (n=224) costing £103.04 (Table 4.5, Figure 3). For the medication Haloperidol, although it was found that total vial count waste was less (n=113), this waste cost the most £722.07, due to each vial costing £6.39.



Next, the analgesics were reviewed. Medication waste from Morphine (n=263) and Oxycodone (n=65) had a combined total medication waste of 328 vials. This finding shows that although pain and breathlessness were indicated as the most common symptom in the last seven days of life (Table 4.6), the analgesics were also a category that occurred high medication waste (Table 4.5).

The data identified two patients who did not use any of their Anticipatory Prescribed Medication, meaning all their Anticipatory Prescribing resulted in waste. Qualitative narrative documentation showed that both patients remained conscious until death, with the oral route still accessible. In comparison, one patient did experience episodes of shortness of breath, being managed with oral morphine, whilst the other patient did not experience any symptoms.

4.6 Prescribing source

Prescribing source data was finally extracted to enable a greater understanding of local prescribing patterns and support interpretation, enabling comparison between prescribing groups. Collection of this data could also contribute to understanding prescribers' decision making.

The findings identified that the most common prescriber for Anticipatory Prescribing was General Practitioner's (GPs) within the community setting (n=17, 56.7%).

Next, was Hospital prescribers (JGH) (n=8, 26.7%) and the remaining were prescribed for by a Hospice prescriber (SPCT) (n=5, 16.6%) (Table 4.8).

Prescriber	Patients (n)	Percentage (%)
GP	17	56.70%
JGH Doctor	8	26.70%
Hospice Doctor	5	16.60%

Table 4.8: Prescribing source

The waste cost of each prescribing source was then reviewed. This showed that the mean waste cost of GP's was £88.94 per patient, £108.66 for Hospital prescribers and £330.08 for Hospice prescribers (Figure 4).

Variation was found in the mean waste cost between prescribing sources but was also accompanied by significant differences in the number of patients for each prescribing source, providing important context during interpretation.

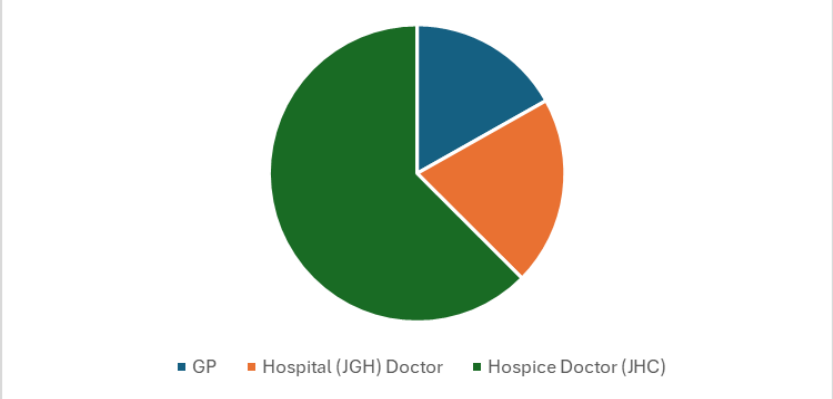


Figure 4: Mean waste cost for prescribing source per patient

4.7 Qualitative findings

The hospice prescriber's narrative documentation showed discussion on prescriber rationale, expected symptoms for a particular patient, the patient's prognosis using GSF coding (Gold Standards Framework, 2024), the patients wish for their care and why Anticipatory Prescribing was appropriate for this patient. A comparison between prescribing sources was not possible, due limited access to GP's narrative documentation post patient death.

4.8 Conclusion

This chapter has discussed the findings from the clinical audit conducted on Anticipatory Prescribing within the local palliative care setting. The findings have shown that most patients were prescribed the core medication categories. Variation was found in prescribing patterns, in what is administered, the frequency of medications prescribed, what was wasted, who prescribed them and how much this cost.

In assessing individualised prescribing, the findings suggest this through the prescribing of medications that are not considered routine, and patients prescribed more than one core category medicine, supported by the review of the Hospice narrative documentation (NICE, 2017) (GOJ, 2022). The next chapter is the discussions chapter, with these findings, and their alignment with NICE (2017) and GOJ (2022) explored further.

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Chapter 5: Discussion Chapter

This chapter will critically examine the findings presented in chapter four. These will be discussed in greater depth, with analysis of their alignment with the project aim and objectives. Discussion throughout will assess how the local setting aligns with Quality statement 3 (NICE, 2017) and GOJ (2022) who recommend individualised prescribing.

Individualised prescribing can be considered subjective and open to interpretation (General Medical Council, 2020) (Bowers and While, 2019). It is therefore difficult for prescribers to evidence and subsequently evaluate through clinical audit (Bowers and While, 2019). Consequently, NICE (2017) promote individualised AP, but do not give guidance on how this is achieved or evidenced. This was also mirrored within the GOJ (2022) policy, who also support individualised AP, but again lack clear auditable parameters.

Quality statement 3 guides clinicians with evidenced based Anticipatory Prescribing practice (NICE, 2017). It is not a quantitative standard, which gives an explicit benchmark to meet and can be audited against (NICE, 2013), therefore making evaluation challenging. Due to this, this project does present more as a service evaluation, instead of a formal audit (NICE, 2013) (Polit and Beck, 2021). This does not however weaken this project but is instead inherent to NICE (2017), which is dependent on clinical judgement rather than a set measurable benchmark. Therefore, when interpretating the findings of this clinical audit, they should be viewed as how Anticipatory Prescribing in Jersey aligns with policy (NICE, 2017) (GOJ, 2022), instead of how the local setting shows compliance with a set measurable benchmark.

Quantitative data enabled extraction of systematic objective data. It could not however give insight into why medications were prescribed (Polit and Beck, 2021) (Creswell, 2014). The inclusion of qualitative narrative document was necessary to address the aim of the project, which included more than examining AP, but also to

assess whether Anticipatory Prescribing was an individualised approach, through adding clinical context to the quantitative data (Creswell, 2014). This highlights the challenges in evaluating individualised prescribing using a clinical audit against a quality statement, instead of an objective standard (NICE, 2017) (GOJ, 2022).

5.1 Frequency of standard anticipatory medication categories prescribed

The core medication categories being routinely prescribed aligns with findings and recommendations from Bowers et al (2018), NICE (2017) and the GOJ (2022) who agree that Anticipatory Prescribing supports symptom control in the dying phase, indicating that the local setting shows alignment with established Anticipatory Prescribing guidance.

It again became apparent that quantitative data provided limited evaluation when the core categories were reviewed (Creswell, 2014) (Polit and Beck, 2021). This was present for the anti-emetics when certain patients were prescribed more than one, with one potential explanation being complex symptom control (NICE, 2021) (Leach, 2019). Even so, this showed that prescribers within the local setting do show scope outside of usual practice, and these prescribing decisions could represent patient specific prescribing (GOJ, 2022).

This was also evident in the patient who was not prescribed an anti-secretory medication (GOJ, 2022), with respiratory secretions in MND often managed by non-pharmacological techniques (NICE, 2016). Therefore, the exclusion of this normally routine medication would also suggest individuality (GOJ, 2022).

5.2 Frequency of individual medicines prescribed

A more comprehensive understanding was provided when individual medications were examined. It was shown that a small number of patients were prescribed medications that are not usually included in standard AP. This variation demonstrated that not all patients are prescribed the exact same medication combinations.

This showed that for these patients Anticipatory Prescribing was initiated with consideration given to clinical complexity and disease trajectory, through prescribing nonstandard medications to ensure effective symptom control in particular patients (NICE, 2017) (Twycross, Wilcock and Howard, 2022) (GOJ, 2022). This variation did suggest patient specific prescribing; however, this finding was unclear through numerical data alone (Polit and Beck, 2021) (Creswell, 2014). The rationale could have arose from complex symptoms, prescribing tailored to disease trajectory or pre-emptive prescribing (NICE, 2017) (GOJ, 2022).

However, once the individual medications were reviewed alongside qualitative narrative documentation evidence of individualised prescribing was identified (NICE, 2017) (GOJ, 2022).

5.3 Medication administration, waste and cost

NICE (2017) suggests that prescribers initiate Anticipatory Prescribing for those who may require it, it does not suggest that all these medications are to be administered. Hence, wasted medications do not necessarily indicate poor prescribing or a lack of alignment to policy (NICE, 2017) (GOJ, 2022).

Two patients were highlighted as not using any of their AP. The data showed that both patients remained conscious, with one patient continuing to use the oral route, which can be lost in the dying phase, whilst the other patient did not experience any symptoms. This scenario highlights the importance and appropriateness of having Anticipatory Prescribing in place for the last days of life, even when medications remain unused (NICE, 2017) (GOJ, 2022).

Reviewed literature recognised that differences were seen in medication administration and waste when Anticipatory Prescribing is initiated pre-emptively (Morgan et al., 2023) (Bowers et al, 2018) (Bowers et al, 2021). This demonstrates the difficulties prescribers encounter when prescribing in advance to ensure

symptom control, with the understanding that these medicines could result in waste.

A large range between the date Anticipatory Prescribing was implemented and patient's date of death was identified. The statement from NICE (2017) does not provide a clear timeframe on when to prescribe, which does have the potential to cause variation. In contrast to GOJ (2022) who advise Anticipatory Prescribing should be in place a few weeks before the expected death, citing the GSF coding Amber and Red as patients who are appropriate (Gold Standards Framework, 2024) (Bowers, et al, 2021).

One patient had Anticipatory Prescribing in place for nine months, with a cause of death listed as Heart failure. This shows difficulties in prognostication and timing, especially when patients are dying from non-malignant illnesses, which can deteriorate and stabilise many times (Gold Standards Framework, 2024) (Bowers et al, 2021). Proactive earlier prescribing may therefore be necessary in certain non-malignant conditions, even when these medicines are more likely to result in waste (Gold Standards Framework, 2024) (Bowers et al, 2021) (NICE, 2017) (GOJ, 2022). This highlights the challenge in ensuring timely access to Anticipatory Prescribing and supporting cost effective use of resources, recognising these goals may conflict (Bowers et al, 2021) (GOJ, 2022) (NICE, 2017).

This also suggests that some Anticipatory Prescribing medication waste is unavoidable and can be considered an inherent outcome of being pre-emptive (Bowers et al, 2021) (Morgan et al., 2023) (NICE, 2017) (GOJ, 2022).

5.4 Prescribing source

GPs were the most frequent prescribers within the local setting, aligning with Bowers et al (2021), NICE (2017) and GOJ (2022) who agree that GPs, routinely in collaboration with the SPCT, are the primary prescribers for Anticipatory Prescribing within the community setting.

Variation in the mean waste cost between prescribing sources was also accompanied by differences in the number of patients from each source, making interpretation difficult. The Hospice prescribers had the smallest number of patients so when higher cost medications were present it increased the overall mean waste cost. More than it would in the larger group; the GP's, with this cost being more distributed. This finding does highlight the influence the number of patients has on the overall mean, with the smaller prescribing sources being more vulnerable to extreme values (Polit and Beck, 2021).

The Hospital (JGH) and Hospice (SPCT) prescribers did have higher amounts of waste and overall mean cost per patient. However, these prescribers often prescribed for patients with increased clinical complexity, prescribing medications that are not routine AP, which did include prescribing of higher cost medications (GOJ, 2022) (Twycross, Wilcock and Howard, 2022). This finding supports the role of the SPCT, which often includes therapeutic treatments not seen in primary care (GOJ, 2022) (Twycross, Wilcock and Howard, 2022). This suggests that when reviewing waste, increased waste is more likely related to patient complexity, rather than the prescribing source (Bowers et al, 2021).

5.5 Qualitative narrative documentation

An analysis of the prescribers' clinical notes was included to evaluate if the local setting supports individualised prescribing, and to assess alignment with NICE (2017) and GOJ (2022). The limited access to the GPs narrative documentation post patient death did mean that the prescribing sources could not be directly compared against, with the findings therefore unable to provide a complete evaluation of local prescribing patterns. However, the Hospice prescriber's clinical notes were available. Within their clinical notes, Hospice prescribers commented on expected symptoms for a particular patient, the patient's prognosis using GSF coding, the patients wish for their care and why Anticipatory Prescribing was appropriate for this patient.

Although this study is fundamentally a quantitative project. Through incorporating qualitative narrative documentation, information on the potential symptom burden for patients, the rationale for the prescriber's decision making, and individualised prescribing could be examined, not being possible through purely quantitative data.

5.6 Limitations and my own learning as the project lead

A limitation of this clinical is that it was conducted on a small sample size (n=30 records), focusing on patients residing in a small island community setting. The audit population is appropriate to review Anticipatory Prescribing within this setting, and it has generated data on local prescribing practice, with service improvement recommendations; however, it does hinder wider transferability (Polit and Beck, 2021).

A retrospective approach was suitable for this project but was reliant on both accessibility and documentation completeness (Polit and Beck, 2021). When data was missing or unavailable, including prescription dose or indication, interpretation was difficult. Also, limited access to GPs narrative documentation meant that for most patients, the prescriber rationale was unable to be analysed and did limit assessment of the local setting.

The absence of a standardised proforma to collect qualitative data does mean the narrative documentation review lacked structure and reduced its methodological rigour (Green and Thorogood, 2018). Projects in the future could use a narrative documentation proforma, or mixed method methodology to allow for a more comprehensive assessment of individualised prescribing (Green and Thorogood, 2018) (Creswell, 2014).

Learning came from the challenges of assessing a quality statement (NICE, 2017) using a clinical audit. Once the statement was re-examined in detail, it led to the inclusion of qualitative narrative documentation. This was a critical learning point,

recognising that in future projects, the study design must remain aligned with the project aim and purpose.

Another learning point has been my perspective on wasted medications. At the commencement of data analysis, the high amounts of waste did present at first as particularly meaningful to the project. However, once the qualitative narrative documentation was reviewed, it suggested that wasted medications can still be consistent with good clinical practice (Morgan et al., 2023) (Bowers et al, 2018) (Bowers et al, 2021).

The refocus of this project reinforced that by prioritising Anticipatory Prescribing waste, the true purpose of Anticipatory Prescribing is overshadowed, promoting symptom management for dying patients (GOJ, 2022) (NICE, 2017) (Beauchamp and Childress, 2013). When considering the two patients who did not use any of their AP, it reinforces that this way of prescribing is pre-emptive, with the potential of it being required, even though it is not guaranteed. Therefore, Anticipatory Prescribing waste should not automatically be viewed negatively, but instead as a possible outcome of individualised care.

My professional role in palliative care did enhance data analysis through having the experience to recognise when quantitative data needed to be explored further and when qualitative narrative documentation needed to be introduced. Nonetheless, I continued to ensure data interpretation was based on the findings, and not solely on clinical experience in this field.

A factor that strengthened this clinical audit was the use of a proforma to aid consistent extraction of standardised quantitative retrospective data for all patient records. By introducing qualitative narrative documentation, additional context was incorporated, which inevitably strengthened understanding of the data.

Lastly, in subsequent audits on this topic, pre-arranged access requirements to all prescribers' qualitative narrative documentation must be in place.

In summary, this clinical audit has shown that to examine AP, clinical context and quantitative objective data must be reviewed together (NICE, 2017) (GOJ, 2022) (Creswell, 2014).

5.7 Implications for advanced clinical practice

A significant implication from the data extraction process was the need for clear and available documentation, particularly prescriber's rationale for medication choice. Limited access was therefore a major limitation, especially when there was variation in prescribing patterns, and the decision-making process was unavailable to review (GOJ, 2022) (Bowers et al, 2018). Within advanced clinical practice, the documentation of decision making ensures patient care is co-ordinated and provides evidence of patient specific decisions (NMC, 2018). It also helps inform future projects and supports interprofessional collaboration (Health Education England, 2017).

A factor that may support an individualised approach is a regular medication review, in conjunction with an island wide symptom assessment tool. At present, the GOJ (2022) suggest a monthly review, which involves a stock take of medications by a community nurse, with this encounter also guiding the prescriber if the patient's condition has changed. At present a prescriber review is recommended as every 3 months. However, a more regular prescriber review, with decision making aided through a symptom assessment tool could ensure medications remain appropriate for the patient and their current need.

Within the inpatient unit at JHC the symptom control assessment tool; the personalised care record (PCR) is used to monitor patients' symptoms pre and post medication administration. In contrast to the community setting in which multiple community organisations use narrative notes. This variation does impact the ability to examine symptom burden and determine medication effectiveness. A potential approach could be the introduction of a universal symptom assessment tool within the community setting, which could support a more objective assessment of

symptom and medication effectiveness, promoting individualised prescribing decisions. It could also enhance evaluation of future projects on this topic.

Both these recommendations were identified within the earlier literature review (Bowers et al, 2023) (Harris, 2019) (Ritchie, 2017) (Marie Curie, 2025), and not because of this project's finding, with additional research therefore needed to explore this. Even though they have the potential to enhance individualised prescribing, additional resources and financial implications must be considered.

Another factor indirectly highlighted from the findings was the importance of communication between health care professionals. The differences in prescribing patterns identified that communication between teams could be strengthened, with interprofessional collaboration supporting ongoing individualised prescribing (GOJ, 2022). Being in the role of an advanced clinical practitioner, a palliative care clinical nurse specialist can enhance this partnership through effective communication between teams, delivering education, prognostic guidance and providing clinical expertise, modelling best practice to community clinicians on individualised AP.

This suggests that medication use and clinical context must be considered together when evaluating prescriber decision making, in particular the review of narrative documentation, the patients' stage of illness and current and anticipated symptoms, to promote patient specific prescribing decisions (GOJ, 2022) (NICE, 2017) (Bowers et al, 2021).

5.8 Conclusion

This chapter has shown that Anticipatory Prescribing within the local setting is generally consistent with NICE (2017) and the GOJ (2022), demonstrated through patients regularly being prescribed the core Anticipatory Prescribing categories. Whilst evidence of individualised prescribing was highlighted in the qualitative narrative documentation and review of the individual medicines.

For this project, the quantitative data enabled analysis of local Anticipatory Prescribing practice, whilst the qualitative narrative documentation provided important patient context to aid interpretation of prescribers' decision-making process. It has also been shown how medication waste can be a consequence of anticipating symptoms and prescribing in advance, highlighting the importance of including wider clinical context in this assessment (Bowers et al, 2021) (Morgan et al., 2023).

In conclusion, this clinical audit has demonstrated that many factors must be considered to evaluate AP. Challenges were encountered when attempting to evaluate the local settings' alignment with a quality statement (NICE, 2017) and GOJ (2022), with qualitative narrative documentation introduced to support further identification of individualised prescribing.

This clinical audit has shown that evaluating Anticipatory Prescribing within the local setting extends beyond a quantitative analysis, but through determining if Anticipatory Prescribing is patient specific, appropriate and continually reviewed to ensure it remains individual.

Chapter 6: Conclusion and Recommendations

6.1 Summary of Key Findings

This project examined Anticipatory Prescribing within community palliative care in Jersey, and its alignment with NICE (2017) and the GOJ (2022) policy. The findings identified that within the local setting Anticipatory Prescribing was consistently in place for dying patients, regularly involving the inclusion of the four core categories, aligning with palliative care professional guidance (GOJ, 2022) (NICE, 2017). This shows that end of life prescribing within the local setting was in place when needed, and patients' potential symptom burden was anticipated, which supports the fundamental aim and values of Anticipatory Prescribing (GOJ, 2022) (NICE, 2017). However, variation was identified when prescribing patterns were explored in greater detail, which showed that prescribers did show differences in medication choice and dosages used, which does suggest patient specific prescribing.

Variation was highlighted further when medication administration between records was reviewed. The number of medicines administered varied greatly between individual patients, with some patient records showing no medications were used from their JIC box, whilst others used different categories of AP. This is supported by the literature, which also discussed patients at the end of life experiencing different symptoms (Bowers et al, 2023). It became clear during data analysis that just examining quantitative data did not provide enough information to be able to determine if Anticipatory Prescribing was clinically justified. Qualitative narrative documentation was therefore necessary to comprehensively analyse this topic, which involved reviewing the prescriber's decision making, symptom burden and disease trajectory.

The findings also showed that medication waste was frequent. Without disputing the necessity of prescribing efficiency, the findings did show that some waste was

to be expected, due to APs pre-emptive nature (Morgan et al., 2023). For example, in some of the reviewed records, patients remained asymptomatic until death, whilst others showed that not all medications from JIC box were needed. This demonstrates the difficult balance for prescribers, ensuring Anticipatory Prescribing is in place at the right time, with prescribing efficiency.

Difficulties were encountered when interpretating the data, due to inability to access some prescriber's qualitative narrative notes, meaning prescriber's decision making and clinical assessment could not always be reviewed. This meant identifying individualised prescribing was challenging. This did align with previously reviewed studies, which recognised Anticipatory Prescribing documentation as essential in examining prescribing patterns (GOJ, 2022) (NICE, 2017) (Bowers et al, 2018).

This audit has shown that examining prescribing patterns is multifaceted, with necessary consideration given to clinical context, patient assessment, effective communication between clinicians, clear and concise documentation and a routine review process. This aligns with earlier reviewed studies, which recognised Anticipatory Prescribing as complex, affected by many factors (NICE, 2017) (GOJ, 2022) (Bowers et al, 2023)

This project used a retrospective methodology, aligning with a clinical audit evaluating Anticipatory Prescribing within the local setting, however, reviewing existing records did rely on data being available and of good quality. Furthermore, the project's sample size does restrict the findings transferability.

A significant strength was that a project on this topic had not been conducted within the local setting before, which does mean the findings from this clinical audit will guide future projects and support service improvement.

6.2 Recommendations

This clinical audit proposes areas for service improvement;

This clinical audit has shown that the local setting largely aligns with policy (GOJ, 2022) (NICE, 2017). The first recommendation is that this alignment continues, and that prescribing patterns remain a patient specific approach, supported with effective communication across community organisations.

The next recommendation is the introduction of a symptom assessment tool used by all organisations across the community setting in Jersey. Highlighted within the literature review and recognised in this project as a factor which affects assessing AP, a universal tool would enable a more accurate symptom assessment of patients. It would also enhance medication reviews, ensuring a changing clinical condition prompts review of a patients' care plan. This could also enhance consistency in symptom reporting, symptom documentation and interprofessional communication.

A re-audit on this topic is the final recommendation of this project. Once access to all prescribers' qualitative documentation is obtained a re-audit would enable a more comprehensive evaluation of prescribing practice. It would also enable an assessment to explore if an individualised approach was present across all prescribers. The findings from this re-audit could then guide service improvement.

6.3 Conclusion

The findings from this clinical audit have addressed the proposed project question, aim and objectives. It has evaluated the categories of medications prescribed, determined what was frequently administered and wasted, identified the cost of wasted medications, informed future prescribing practice and assessed the local settings alignment with policy (GOJ, 2022) (NICE, 2017).

This clinical audit has shown that prescribing patterns within the local setting do largely align with professional guidance by the GOJ (2022) and NICE (2017). Many factors, such as limited access to prescribers' rationale and a lack of consistent symptom assessment did restrict the ability to fully evaluate Anticipatory Prescribing patterns. The findings do support that when analysing waste, factors such as context and patient's symptom burden must be considered.

In conclusion, this project has provided a comprehensive evaluation of Anticipatory Prescribing patterns within community palliative care in Jersey. This project has shown that Anticipatory Prescribing evaluation extends beyond the numerical data, with consideration to each patient's clinical context necessary to ensure it continues to be an individualised approach. The recommendations are aimed at continued development of individualised Anticipatory Prescribing within palliative care services.

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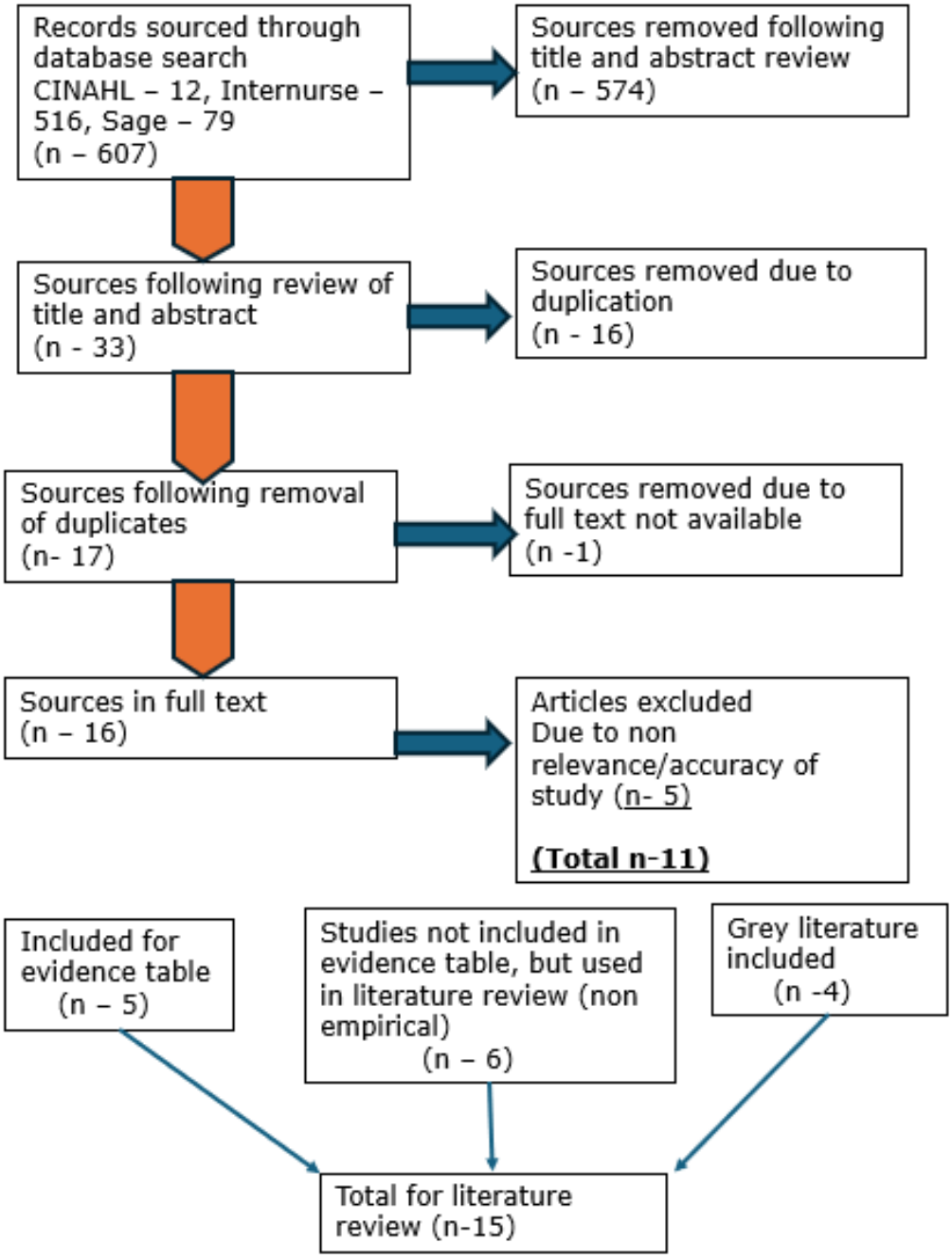
Appendices

Appendix 1 Search strategy



Appendix 2 Evidence table

Paper number, Author, Year, Title	Purpose of study	Methodology	Summary	CASP
1). Bowers et al (2021) 'Unwelcome memento mori or best clinical practice? Community end of life anticipatory medication prescribing practice: a qualitative study'	This study aimed to explore views of healthcare professionals on anticipatory prescribing within the community	-Mixed methods Qualitative -semi-structured interviews with healthcare professionals + observational -Thematic analysis	This study recognised Anticipatory Prescribing as fundamental in achieving effective symptom control in the community setting. Issues were discussed that caused a variance in when medications were prescribed; difficulties in determining prognosis, experience and confidence of prescriber. Discussion on Anticipatory Prescribing being in place too early, resulting in waste	-The aim of this study was clearly stated. -Its methodology was suited to being qualitative, gaining perspectives through interviews. -Recruitment was appropriate, clinicians with experience on the subject selected -Data collection process was clear, matched research purpose -Ethical considerations, clearly discussed and all addressed
2). Bowers et al (2023) 'Anticipatory prescribing in community end-of-life care: a systematic and narrative synthesis of the evidence since 2017'	This study reviewed community Anticipatory Prescribing evidence from 2017, within the community setting	-Systematic review + narrative synthesis - 9 databases used -28 papers used	Core categories were routinely prescribed in the UK. Variation in medication administration and its outcomes. Families Anticipatory Prescribing welcomed but felt lacked explanation. -Further research needed	-The aim of this study was clearly stated -Its methodology was suitable, comprehensive search strategy - Data was appraised - Rigorous and relevant review
3). Morgan et al (2023) 'The financial costs of anticipatory prescribing - a retrospective observational study of injectable medications prescribed at the end of life in the community.'	This study explored the cost associated with Anticipatory Prescribing in the community setting, focusing on what is prescribed, used and unused	-Retrospective observational study, reviewing patient records - Quantitative	This study reports that half of patients included in this review had AP. The average cost per prescription was £43.17, compared to what was used - £2.16, resulting in the majority being wasted. This study recognised certain medications were most commonly seen to be wasted in the JIC box, with Glycopyrronium, Cyclizine and Haloperidol identified as the most likely to be wasted. It also recognised that for patients receiving their Anticipatory	-The aim of the study was clearly stated -Its methodology was suitable for the study design -Data collection was appropriate, using patient records -Quantitative Statistical analysis used to determine cost and waste per patient -Ethical considerations, clearly discussed and addressed

			Prescribing through a syringe pump, cost was even higher.	
4). Bowers et al (2018) 'Anticipatory prescribing of injectable medications for adults at the end of life in the community: A systematic literature review and narrative synthesis'	This study conducted a systematic review of current literature on Anticipatory Prescribing within the community setting	-Systematic literature review/ narrative synthesis. - Multiple search databases used	This study reports that Anticipatory Prescribing is commonly viewed by clinicians as beneficial, enhancing symptom control, and promotion of comfort in the community setting. Bowers reports from conducting this review that evidence is lacking in determining the effectiveness of AP, and its contribution to symptom control and ensuring patient comfort in the community setting.	-The aim of the study was clearly stated -The methodology was suitable, detailing a transparent search -Appraisal of results clear and described
5). Bowers et al (2024) 'Administering injectable medications prescribed in the anticipation of the end of life in the community: A mixed-methods observational study'	This study explored Anticipatory Prescribing within the community setting, focusing on frequency of prescribing, administration, and the documentation used	-Retrospective observational study, reviewing patient records - mixed-methods	This study reports that medications were used in 59.9% of patients, usually being commenced in the 3 days leading up to the patient's death. Medications were used by community nurses. The documentation recognised a lack of medication effectiveness review, with documentation gaps making the process of determining effectiveness of Anticipatory Prescribing and patient outcomes challenging	-The aim of this study was clearly stated -Its methodology was suitable, using quantitative and qualitative methods to collect data to meet aims of study -Data was collected through patient records -Data was analysed for quantitative and qualitative data appropriately Ethical considerations – Clearly discussed and approval gained

Appendix 3 Quantitative data proforma

Number	Age	Sex	Diagnosis	Date of Death	Place of Death	Days Known to SPCT	Prescriber	AP date	Individual Medication	Dose	Indication	Route	Vials Prescribed	Vials Administered	Vials Wasted	Cost per Vial (£)	Total Cost of Prescription (£)	Total Cost Wasted (£)	Vials administered in last 7 days
1	62	M	Prostate CA. Renal failure	08-Jun-25	Home	18 Days	GP	29/05/2025	Oxycodone	1.25-2.5mg PRN Hourly	Pain and breathlessness	SC	20	4	16	£2.20	£44.00	£35.20	4
									Midazolam	2.5-5mg PRN Hourly	Agitation	SC	20	4	16	£0.46	£9.20	£7.36	4
									Glycopyronnium bromide	200mcg PRN 6 Hourly	Respiratory secretions	SC	10	3	7	£1.80	£18	£5.40	2
									Haloperidol	0.5-1mg PRN 6 Hourly	Nause and vomiting	SC	10	0	10	£6.39	£63.90	£63.90	0
									Water for injection	Diluent (Ampoules)		SC	20	10	10	£0.36	£7.20	£3.60	9
																	£142.30	£115.46	
2	49	M	CA Pancreas	08-Jun-25	Home	66 Days	GP	16/05/2025	Morphine	2.5-5mg PRN Hourly	Pain/SOB	SC	30	9	21	£0.79	£23.70	£16.59	9
									Midazolam	2.5-5mg Hourly	Anxiety	SC	10	4	6	£0.46	£4.60	£2.76	4
									Glycopyronnium bromide	200mcg 4 Hourly	Secretions	SC	10	0	10	£1.80	£18	£18	0
									Levomepromazine	6.25-12.5mg PRN 6 Hourly	Nausea/vomiting	SC	10	3	7	£2.01	£20.10	£14.07	3
									Water for injection	Diluent		SC	30	7	23	£0.36	£10.80	£8.28	7
																	£77.20	£59.70	
3	95	M	Malignant melanoma	14-Jul-25	Home	121 Days	JGH Doctor	28/06/2025	Morphine	1.25-2.5mg Hourly	Pain	SC	10	4	6	£0.79	£7.90	£4.74	4
									Midazolam	2.5mg Hourly	Agitation/anxiety	SC	10	3	7	£0.46	£4.60	£3.22	3
									Glycopyronnium bromide	Missing	Missing	SC	10	0	10	£1.80	£18	£18	0
									Haloperidol	Missing	Missing	SC	10	0	10	£6.39	£63.90	£63.90	0
									Water for injection	Diluent		SC	5	3	2	£0.36	£1.80	£0.72	3
																	£96.20	£90.58	
4	85	F	CA Oesophagus	22-Jul-25	Home	7 Days	JGH Doctor	16/07/2025	Oxycodone	1.25-2.5mg Hourly	Pain	SC	20	16	4	£2.20	£44	£8.80	16
									Midazolam	1.25-2.5mg Hourly	Agitation	SC	35	23	12	£0.46	£16.10	£5.52	23
									Glycopyronnium bromide	200-400mcg 6 Hourly	Secretions	SC	10	2	8	£1.80	£18	£14.40	2
									Haloperidol	0.5-1mg 2 Hourly	Nausea	SC	20	8	12	£6.39	£127.80	£76.68	8
									Water for injection	Diluent		SC	40	17	23	£0.36	£14.40	£8.28	17
																	£220.30	£113.68	
5	87	M	Parkinsons. Heart failure	05-Aug-25	Home	28 Days	GP	22/07/2025	Oxycodone	1.25-2.5mg PRN Hourly	Pain/breathlessness	SC	5	1	4	£2.20	£11	£8.80	1
									Midazolam	1.25-2.5mg 1-4 Hourly	Agitation/anxiety	SC	5	1	4	0.46	£2.30	£1.84	1
									Glycopyronnium bromide	200mch 4 Hourly	Respiratory secretions	SC	10	1	9	1.8	£18	£16.20	1
									Levomepromazine	3.125mg 6 Hourly	Nausea and vomiting	SC	5	0	5	£2.01	£10.05	£10.05	0
									Water for injection	Diluent		SC	10	1	9	£0.36	£3.60	£3.24	1
																	£44.95	£40.13	

Appendix 4 Data management risk assessment

Project Title: A clinical audit to evaluate compliance with NICE (2017) Quality Standard QS144 Quality Statement 3; anticipatory prescribing of medications in the last week of life and Government of Jersey (2022) Adult Palliative Care: Anticipatory Prescribing Policy.

Principal Investigator: Lauren Farrelly

Setting: Community Palliative Care, Jersey

1. Risks to Participants

Risk	Description	Likelihood	Impact	Mitigation Strategy
Loss of patient anonymity	Living in a small island community with one Hospice – patients may be recognisable, even when anonymised	Low	High	Patients' data will be handled and stored securely. Patients' data will be number coded
Selection bias	The project lead is employed in setting where data is being collected	Low	Low	Data will be sourced from 1 month period when project lead not on duty

2. Risks to Researchers

Risk	Description	Likelihood	Impact	Mitigation Strategy
Emotional upset	Reviewing medication charts revealing patients with poorly controlled symptoms control at end of life	Medium	Medium	Maintaining patient confidentiality project lead could explore these concerns with clinical mentor. If escalation required (e.g. identifying prescribing errors) then reporting to clinical lead will be required

Incomplete/ poor quality data	Project lead is reliant on quality of data that has been previously inputted. E.g. incomplete data	Medium	Low	Cross referencing of records will be used to identify missing data. If incomplete records remain, this data will not be included in data collection and will be disregarded

3. Data Protection Risks

Risk	Description	Likelihood	Impact	Mitigation Strategy
Data breach	Patients' private data leaked	Low	High	All files containing collected patient data will be encrypted and saved onto a password protected computer in a secure one drive folder. GDPR and Data Protection (Jersey) Law 2018 will be followed.
Poor data handling	Data not handled correctly, at risk of being viewed by others	Low	High	All data will be handled, stored, shared and destroyed appropriately in line with Data Protection (Jersey) Law 2018. A clear dissemination plan will also be in place.

4. Ethical Considerations

Risk	Description	Likelihood	Impact	Mitigation Strategy
Organisational reputational damage	Inappropriate access to data or misuse of data	Low	High	Consent will be gained from the Organisational lead – that the project lead can access private patients notes for the purposes of a service evaluation.

				GDPR and Data Protection (Jersey) Law 2018 will be followed.

Ethics Approval:

The project will be reviewed by the RGU School of Health Ethics Review Panel (SERP).

The project will be registered with the Clinical Audit Team at Health and Care Jersey as per the requirements for Service Evaluations

5. Risk Rating Summary

Overall Risk Level	Mitigation Adequacy	Residual Risk
Low	Appropriate mitigations in place	Low to Medium