Towards an innovative Virtual Ward initiative for specialist palliative care: Service evaluation findings from St Columba's Hospice Care

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EXECUTIVE SUMMARY

Background

The number of people anticipated to need palliative and end-of-life care is expected to increase significantly in the coming years. This is expected to occur in the UK under a changed landscape of an ever increasingly strained health care system of rising general demand and acute shortages of staff.

Enhanced medical and nursing support in a Virtual Ward offers an alternative to inpatient care and may facilitate death at home for those who wish this, yet are frequently unable to do so. Virtual Ward care has been piloted on a small scale, for hospital inpatients receiving specialist palliative care and found to be safe and effective way for people to be cared for in their own home. It is suggested that, as well as supporting people to remain at home, who would otherwise require to be in hospital, Virtual Wards can provide more flexible workforce options, including flexible working patterns and blended roles.

Responding to existing service demands and adapting to anticipated pressures in the coming years, St Columba's Hospice Care piloted an innovative Virtual Ward initiative as an alternative to inpatient care over a three-month period providing daily, face to face specialist medical and nursing assessment with additional support available between 08:00-20:30.

Aim

We carried out a comprehensive service evaluation over a period of five months beginning prior to the pilot three-month Virtual Ward starting and ending after it had completed. The overall evaluation aim was to explore how the Virtual Ward works in practice and its perceived impact.

Methods

This evaluation used a convergent, parallel mixed-methods design. An overview of those admitted to the Virtual Ward and the nature and use of the service in practice was gathered via detailed service use data and analysed descriptively. Semi-structured interviews with patients and family members and admitting health care professionals was sought from a convenience sample of 20 patients, alongside focus groups and interviews with staff delivering the service. Qualitative data were analysed thematically. Questionnaire feedback was sought from primary and secondary care teams regarding their experience of having patients admitted to the Virtual Ward.

Key findings

The Virtual Ward effectively managed symptoms, lifted the burden of responsibility for care at home from families and enabled care to take place where it was preferred or necessary. The Virtual Ward was associated with an increased sense of staff job satisfaction and effective intra and inter agency partnerships. Primary and secondary care services reported positive views of Virtual Ward care for their patients and either no increase, or a reduction in their workload. Difficulties described were around information about the service, medication prescribing and effective communication with GP colleagues.

Recommendations

- Options for developing the prescribing role of the Virtual Ward team should be considered.
- Options for enabling more timely access to medications from pharmacy suppliers should be considered.

- Options for enhancing understanding and promotion of the service model for patients, families and primary and secondary care colleagues should be considered. This information should include clarity about who the main care provider is and who to contact for arising scenarios. The importance and benefit of collaborative working should be emphasised.
- Systems for timely communication with GPs should be considered in partnership with primary care teams to find optimal methods that will ensure that GPs remain and feel fully informed about their patients.
- Consideration should be given to changing the name of the service given the association of the word "Virtual" with care provided from a distance.
- Team mobile phones should be turned off or on silent at all times during visits to maximise person centred interactions and avoid the sense of guilt, and busyness this led to when calls to Virtual Ward team were needed.
- The potential benefits of extending the service to include weekend admissions should be considered as this would lead to more timely patient admissions and potentially reduce the variation in activity seen over the week. Furthermore, the hours of service could be reconsidered given that the vast majority of visits were carried out later in the day.

Given that this was a service evaluation was carried out over a three-month period, during which time it was a completely new service for the hospice, for those working on the Virtual Ward team and for associated health and social care services, it would be pertinent to carry out further evaluation of the Virtual Ward when it becomes more established. At this time it would be helpful to repeat the comparison of symptom burden between admissions to Virtual Ward and admissions to the inpatient unit.

[1] BACKGROUND

There is well documented evidence that the number of people who will need palliative and end-of-life care in the coming years is set to increase significantly (Finucane et al 2021). Additionally, in recent years the UK has faced an ever increasing, nationwide health care team crisis that peaks in the winter months. St Columba's Hospice Care responded to the increased demand and acute shortage of team in the winter months of 2021-2022 and 2022-2023 by shifting the balance of care in order to provide more people at their own home environments. In line with our strategic plan, 'Adapting to a changing world' St Columba's Hospice Care ensures that the care we provide is responsive to our community whilst remaining sustainable within our available financial and people resources. St Columba's Hospice Care have thus considered alternative approaches to delivering palliative and end-of-life care.

In recent years, a number of Virtual Wards, Hospital at Home or Hospice at Home services have been developed in various healthcare settings across the UK. Virtual Wards have been found to be effective in reducing in patient bed use by reducing length of stay by 40% (Swift et al. 2022), avoiding admission by 50% (England 2022) or by allowing more intensive support following discharge across health care sites in England, largely to manage during the Covid-19 crisis (Thornton 2020). Virtual Ward care has been trialled on a small scale, for hospital inpatients receiving specialist palliative care services and found to be safe and effective way for people to be cared for in their own home (Barry et al. 2022). How Virtual Ward care is delivered varies across sites and may involve phone support or patient monitoring through a specially designed app (Thornton 2020). It is suggested that, as well as supporting people to remain at home, who would otherwise require to be in hospital, that Virtual Wards can provide more flexible workforce options, including flexible working patterns and blended roles (NHS England 2022).

Responding to existing service demands, and anticipating and adapting to anticipated pressures in the coming years, St Columba's Hospice Care piloted a Virtual Ward as an alternative to inpatient care over a three-month period. To our knowledge, this is the first specialist palliative care Virtual Ward pilot in Scotland. While learning from the experiences of such services across England, we implemented a service evaluation of this three-month pilot. Informed by mixed methods participatory evaluation methodologies, we collected both quantitative and qualitative data and prioritised learning from the views and experiences of patients, their families, our hospice team and other primary and secondary care providers.

[2] THE VIRTUAL WARD

2.1 The Virtual Ward

Virtual Wards provide an alternative option to inpatient care for patients who are clinically unstable, who are imminently dying or who are at high risk of sudden deterioration but who could, and wish to, be cared for in their own home or care home (NHS England, 2022). An umbrella review of Hospital at Home care has outlined that this model of care can support early discharge from hospital and avoid hospital admissions for people with a range of conditions (Leong et al. 2021). Translating these outcomes for those in a hospice setting, a Virtual Ward could also offer a transition option to support earlier discharge from inpatient care or provide temporary support for someone on the inpatient waiting list.

The Virtual Ward at St Columba's Hospice Care provides time limited support for up to 14 days for people in their own home or care home who would otherwise require inpatient admission to a hospice or an acute hospital in order to meet their palliative care needs. During the pilot, the service operated seven days a week from 8:00-20:30.

The service is 'virtual' in that it aims to provide the same level of medical assessment and advice as would be offered to someone in the inpatient unit but will be provided within their own home or care home. In person assessments and care are a core part of this Virtual Ward so this is not an entirely 'remote' service like some other Virtual Ward initiatives. The service is hybrid in that, in order to provide timely review and support when the team are not present in the home, the use of 'Attend Anywhere' for video consultations is additionally offered.

People being cared for in the Virtual Ward are able to receive more intensive support than is available from the Community palliative care team (doctors, registered nurses and allied health professionals who provide management and advice around complex needs and co-ordinating of end-of-life care) and routinely receive daily nursing and medical assessment of their care needs. They also receive in-person support from the Care at home Team members (hands-on care and support in the home by experienced palliative care health care assistants) where they require assistance with their physical care needs.

2.2 Criteria for admission to the Virtual Ward

2.2.1 Inclusion criteria (Adapted from NHS England, 2022)

The Virtual Ward provides short term (up to 14 days) support for up to 5 people living with palliative illness who wish to be cared for in their own home but who:

- are clinically unstable and require daily assessment as they would otherwise require to be in an inpatient in the hospice or acute hospital (phase of illness = unstable), or

- are imminently dying but their care needs are escalating and require daily review (phase of Illness = dying), or
- are at high risk of sudden and acute deterioration and there is a concern they may require their care or support to be quickly escalated, or
- are currently an inpatient in the hospice or acute hospital, and who wish to be at home or return to their care home but their current level of care needs means this would be challenging without access to a daily review (phase of illness confirms unstable, deteriorating or dying).

2.2.1 Exclusion criteria (Adapted from NHS England, 2022)

The Virtual Ward is not a suitable option for people living with palliative illness who:

- are experiencing symptoms related to treatable / reversible cause, for example hypercalcaemia, sepsis or fractures which cannot be treated out with an inpatient setting, or
- require investigations or interventions which can only be provided in an inpatient setting, or
- are considered to be adults at risk in their own home or care home.

[3] SERVICE EVALUATION

3.1 Aims and objectives

We carried out a comprehensive service evaluation over a period of five months beginning prior to the pilot three-month Virtual Ward starting and ending after it had completed. The overall evaluation aim was to explore how the Virtual Ward works in practice and its perceived impact. More specifically, its aims and objectives were as follows.

Aims:

- To document the pilot Virtual Ward that was delivered.
- To detail who was admitted to the Virtual Ward and why.
- To evaluate to what extent the pilot Virtual Ward has been effective from the point of view of patients, family members and team involved in the delivery of care.
- To evaluate the impact of the Virtual Ward on associated health and social care services.
- To identify the strengths and weaknesses of the Virtual Ward.

Objectives:

- To provide a detailed description of patients admitted to the Virtual Ward in terms of their age, gender, phase of illness, functional status, symptom burden and source of referral and to compare this with St Columba's Hospice Care inpatient data.
- To detail the interventions provided in terms of the number of visits, by whom, length of time in the service and outcomes.
- To explore the experiences of patients and their families regarding their Virtual Ward admission.
- To explore the views and experiences of hospice team regarding the Virtual Ward.
- To explore the views and experiences of health and social care providers involved in the care and support of patients admitted to the Virtual Ward.

3.2 Methods

This service evaluation used a convergent parallel mixed methods design (Creswell & Clark 2017). As detailed below, descriptive outcome data was gathered regarding service usage over the evaluation period. Qualitative interview and focus group (FG) data was sought from patients, family members and team involved in delivering the Virtual Ward. Finally, questionnaire feedback was gathered from primary and secondary care services impacted by the Virtual Ward. This data was combined to provide a broad description of the service and an evaluation of the Virtual Ward from the perspective of this wide range of stakeholders.

3.2.1 Data collection

Quantitative data

In order to provide an overview of the Virtual Ward, the following data was gathered:

- Patients' demographics: age, gender and diagnosis.
- Referral:
    - Source of referral.
    - Reason for referral; patient is:
        - clinically unstable and require daily assessment as they would otherwise require to be in an inpatient in the hospice or acute hospital.
        - imminently dying but their care needs are escalating and require daily review.
        - at high risk of sudden and acute deterioration and there is a concern they may require their care or support to be quickly escalated.
        - currently an inpatient in the hospice or acute hospital, and who wish to be at home or return to their care home but their current level of care needs means this would be challenging without access to a daily review.
- The nature of Virtual Ward intervention:
    - In-person visit, telephone call with patient /family /Health and Social Care Partner (HSCP), Attend Anywhere with patient / family / HSCP and whether by Dr / RN / Both / joint with external HSCP.
    - Day of week and time of day that intervention occurred.
    - Team visited the patient according to team category and numbers of team (one or two).
- Length of time and outcome for patients admitted to the Virtual Ward
    - Length of time that the service was in place from first assessment to death or discharge.
    - Death, discharge, referral to alternative service.

Qualitative data

Qualitative data sought to describe the experience of the Virtual Ward prom perspective of those receiving care and from those involved in its delivery. Such data was generated by patients and family members, Hospice team members, and from primary and secondary care providers as outlined below.

Patients and family members: In order to gain more understanding of the care experience for patients and family members, we planned to undertake in-person, semi-structured interviews with 20 patients (or family member as a proxy). All Virtual Ward patients were considered for inclusion in the evaluation, and a convenience sample of 20 patients was sought. Family members were included as a proxy if the patient was too unwell to participate. For those patients included in the interviews, we carried out semi structured interviews with team members who admitted the patient to the Virtual Ward to explore their perspectives on the patient's admission, and reasons for this.

Overall, a total of 20 patients were included in the qualitative interview study. Of these 7 were female and 13 were male, they ranged in age from 33 years to 95 years (mean 71.3 years) and were stayed on the Virtual Ward for between 1 day and 20 days (average 6.2 days). Of those asked to participate all agreed, however one relative agreed but the patient moved to hospital and they subsequently declined. The family of one other patient had returned to their country of origin for an extended period and were no longer contactable. All interviews were carried out with family members nominated as a proxy. Details of the interviews and those included in the interviews can be found in Appendix 1.

Martin Bijak (MB) – a clinical nurse specialist working in the community palliative care team at the hospice and research nurse with experience in qualitative methods – collected the data from patients, families, referring clinicians and from primary and secondary care services. Anna Lloyd (AL) – a research fellow and experienced doctoral level qualitative researcher – collected the data from the hospice team.

Hospice team: Five one-to-one semi-structured interviews were held with those managing the Virtual Ward or from teams closely associated with it. Four focus groups (FG) were held with team members of the Virtual Ward team. Three focus groups were held with the Care at Home team.

Primary and secondary care providers: To further evaluate the Virtual Ward initiative, we requested feedback from General Practitioners (GPs), District Nurses (DN's), care/nursing homes and Hospital Palliative Care Teams (HPCT) using a bespoke evaluation feedback form. Three questions pertained to the care and support offered to patients. Three questions pertained to their team, their communication with the Virtual Ward and information given about this initiative. All were able to be scored from 1 (very poor) to 5 (very good). The final question was about the impact on the workload of their team and scored from 1 (added to workload) to 5 (reduced workload). The form can be found in Appendix 2. Specifically, we contacted each of the GP surgeries associated with the 20 patients' cases for feedback. We received 3 completed forms from 3 GP practices and written feedback from a further 3.

We contacted each DN team that had involvement with the 20 patients who were interviewed. We received 6 completed feedback forms. We contacted the two care homes that had been the residence of two of the 20 patients. We received 2 completed feedback forms. We contacted both Hospital Palliative Care Teams (HPCT) based in the Western General Hospital (WGH) and the Royal Infirmary of Edinburgh (RIE). We received one completed feedback form. Completed evaluation feedback forms were returned via email to the research team.

Table 1: Overview of participants, qualitative methods and evaluation team members

Participants	Qualitative methods	Evaluation team member
Hospice team	5 semi-structured interviews 7 focus groups	Researcher (AL)
Patients and family members	20 semi-structured interviews	Research nurse (MB)
Referring clinicians	20 semi-structured interviews	Research nurse (MB)
Primary and secondary care providers	Evaluation feedback forms were received from 3 GP (3 others provided written feedback), 6 DN teams, 2 Care Homes and 1 Hospital Palliative Care team of the patient cases.	Research nurse (MB)

3.2.2 Data analysis

Quantitative data were analysed using descriptive statistics. Interviews with patients, family members and referring clinicians were transcribed and analysed to identify key themes regarding the Virtual Ward. Anna Lloyd (AL), Martin Bijak (MB) and Julie Young (JY) – a nurse lecturer with experience of qualitative analysis – carried out the analysis and discussed emerging findings to refine and develop themes. Similarly, interviews and focus groups (FG) with teams were analysed via repeated listening to audio recordings and analysed to identify the key themes regarding the Virtual Ward. AL and JY carried out the analysis and discussed emerging findings to refine and develop themes. Analysis of all interviews and focus groups was undertaken drawing on principles of thematic analysis (Braun and Clarke 2006).

Feedback from primary and secondary care providers was collated to show rating scores given for the questionnaire items. Answers to the written feedback and free text were gathered and used to further illustrate their evaluation of the Virtual Ward. Emerging quantitative and qualitative findings were considered and presented alongside each other to illustrate and contextualise the overall service evaluation.

[4] FINDINGS

4.1 Profile of people admitted to the Virtual Ward

4.1.1 Demographics

A total of 46 patients were admitted to the Virtual Ward during the pilot period of 01 March 2023 to 31 May 2023. A breakdown of patient age and gender is provided in figures 1 and 2 below. 39% of patients were aged 70-79, 24% aged 60-69, 24% older than 80. Only 13% were under the age of 60. 46% of those admitted to the Virtual Ward were male and 54% were female.

We compared these data to the hospice inpatient unit data for a three-month period from 01 May to 31 July 2023 as full inpatient unit data for the same time period of the Virtual Ward pilot was not available. In total, 66 patients were admitted to the inpatient unit over this three-month period as detailed in figures 1 and 2. 30% were aged 70-79, 22% older than 80. 30% were under the age of 60. 48% were male and 52% female. Overall, it appears that slightly more patients in the younger age brackets were admitted to the inpatient unit than the Virtual Ward with no differences in gender characteristics.

Figure 1: Age of patients admitted to the Virtual Ward and the inpatient unit

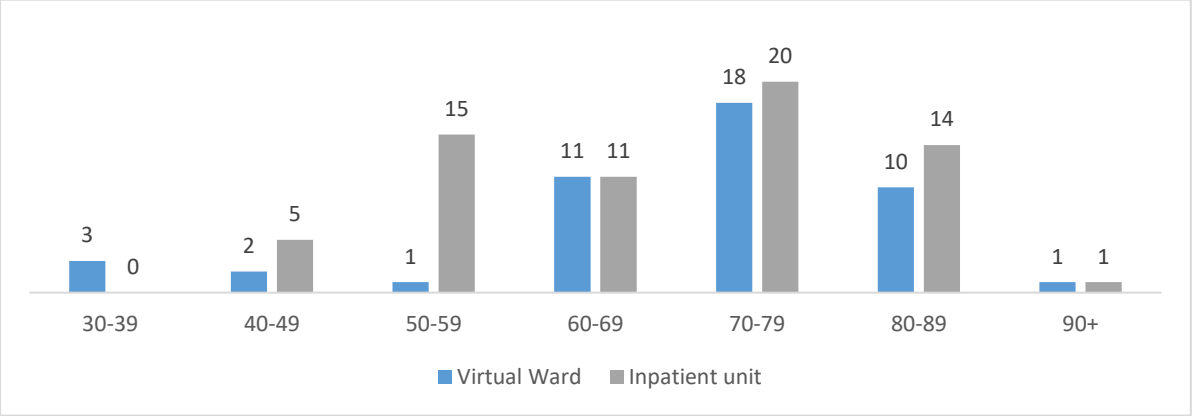
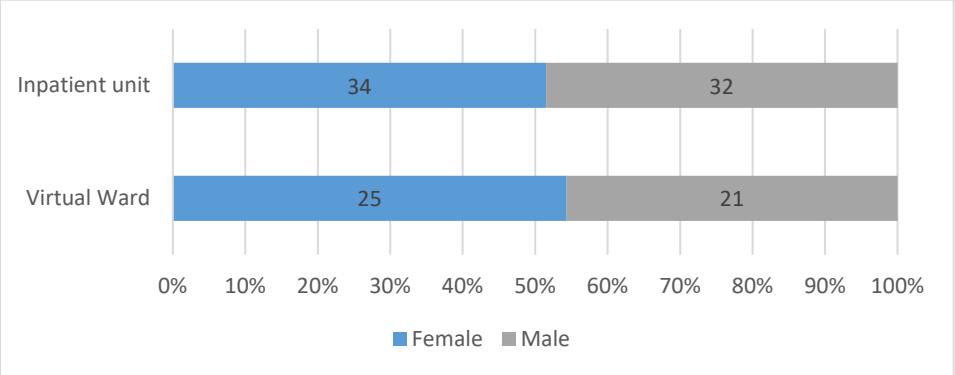
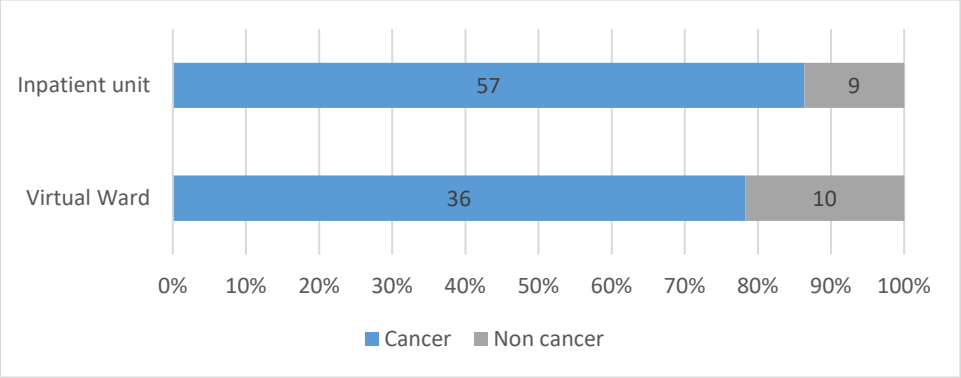


Figure 2: Gender of patients admitted to the Virtual Ward and the inpatient unit



In terms of the conditions that people had when they were admitted to the Virtual Ward, figure 3 shows that 78% (n=36) had cancer and 22% (n=10) had non-malignant conditions which included Creutzfeld-Jakob disease, out of hospital cardiac arrest, motor neurone disease, heart failure, and interstitial lung disease. For those admitted to the inpatient unit (01 May to 31 July) slightly more are admitted with cancer at 86% with 14% with non-malignant conditions.

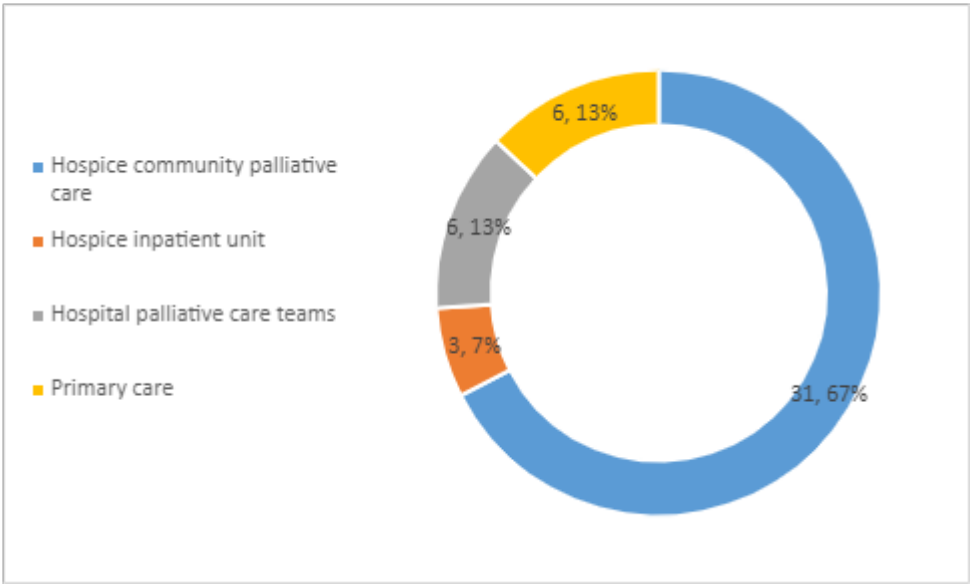
Figure 3: Diagnosis of patients admitted to the Virtual Ward and the inpatient unit



4.1.2 Source of referral

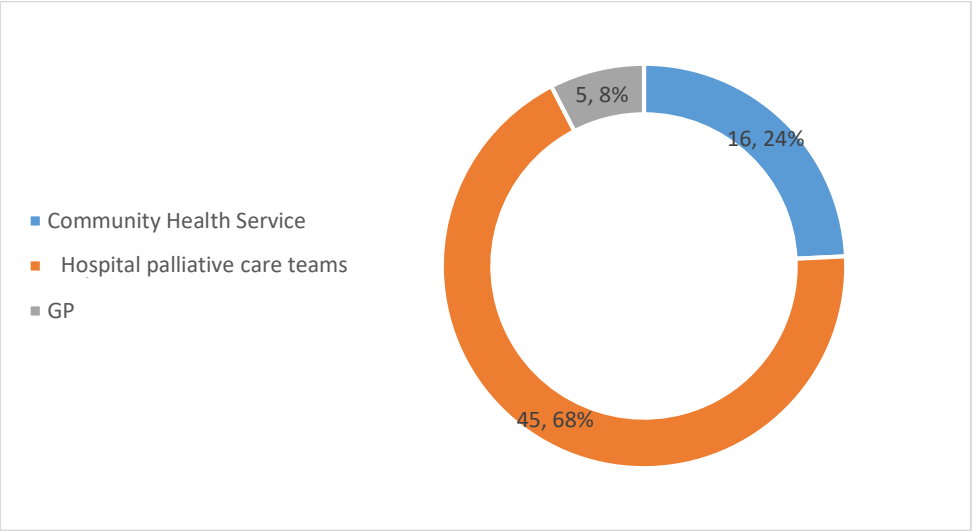
Patients were referred from four different areas: Hospice community palliative care team, hospice inpatient unit, hospital palliative care team or primary care. Figure 4 shows that during the pilot period, the majority of patients (67%) were referred from St Columba's Hospice Care community palliative care team. 13% came from primary care, 13% from hospital palliative care services and the remaining 7% from the hospice inpatient unit.

Figure 4: Source of referral of patients admitted to the Virtual Ward



Patients admitted to the inpatient unit, in contrast, were predominantly (68%) referred from hospital palliative care teams (see figure 5). Of the remaining patients 24% were referred from Community Health Services (which includes St Columba's Care community palliative care team) and 8% from General Practitioners.

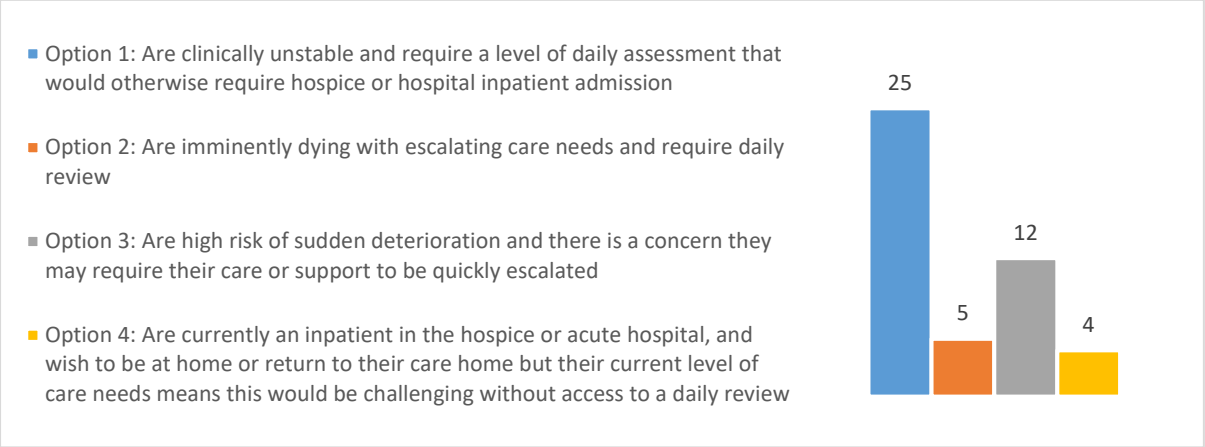
Figure 5: Source of referral of patients admitted to the inpatient unit



4.1.3 Admission criteria

All patients admitted to the Virtual Ward met one of the specified admission criteria. 54% were clinically unstable, 5% were imminently dying, 26% were considered at high risk of sudden deterioration and the remaining 9% were inpatients in the hospice or acute hospital, and who wished to be at home or return to their care home but their current level of care needs were too great to manage without increased support and regular review (figure 6). Comparative admission criteria data for those admitted to the Inpatient Unit were unavailable.

Figure 6: Admission criteria of patients admitted to the Virtual Ward



4.1.4 Functional status and symptom burden

In order to gather more data and outcomes for those admitted to the Virtual Ward during the pilot period, Resolve outcome measures were gathered, including the Integrated Palliative care Outcome Scale (IPOS) and the Australia-modified Karnofsky Performance Scale (AKPS) during routine patient assessment. Figure 7 shows the functional status (AKPS) by phase of illness at first assessment and demonstrates that of those considered unstable, 33% were functionally highly dependent or bedbound. Of those assessed to be stable, deteriorating or dying, most (78%) were functionally highly dependent or bedbound. It must be noted that there is missing data for four patients within this figure. Some incomplete data for AKPS limit the clarity of the data regarding this.

Figure 7: Phase of illness and AKPS at first assessment for the Virtual Ward

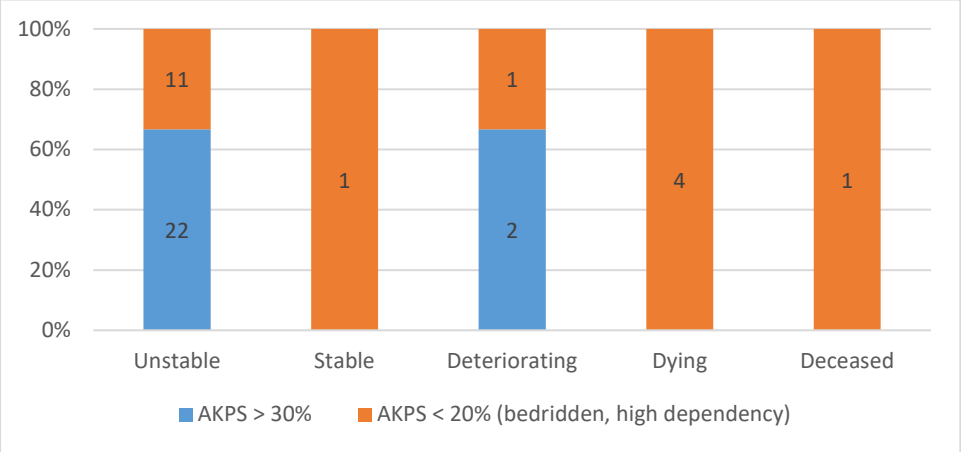


Figure 8 shows the functional status (AKPS) by phase of illness at first assessment for those admitted to the hospice inpatient unit. Of those considered unstable, 16% were functionally highly dependent or bedbound. Of those assessed to be deteriorating or dying, all were functionally highly dependent or bedbound. No patients were assessed as stable. Again, some incomplete data for AKPS limit the clarity of the data regarding this.

Figure 8: Phase of illness and AKPS at first assessment for In Patient Unit

Analysis of initial visit data for the Virtual Ward demonstrates a comparable symptom burden for pain, shortness of breath, nausea, vomiting, drowsiness, and poor mobility as for those in the inpatient unit (see figures 9 and 10). However, the symptom burden for weakness, poor appetite, constipation, and dry mouth was higher for the patients in the Virtual Ward than the inpatient unit. While it could be extrapolated that those in the Virtual Ward experienced more severe symptoms, it should be noted that data was unavailable for 34% of Virtual Ward patients and 48% of patients in the inpatient unit. This missing data limits the meaningfulness of comparing the symptom burden of patients across these two services.

Figure 9: Resolve outcome measures at first assessment of patients admitted to the Virtual Ward

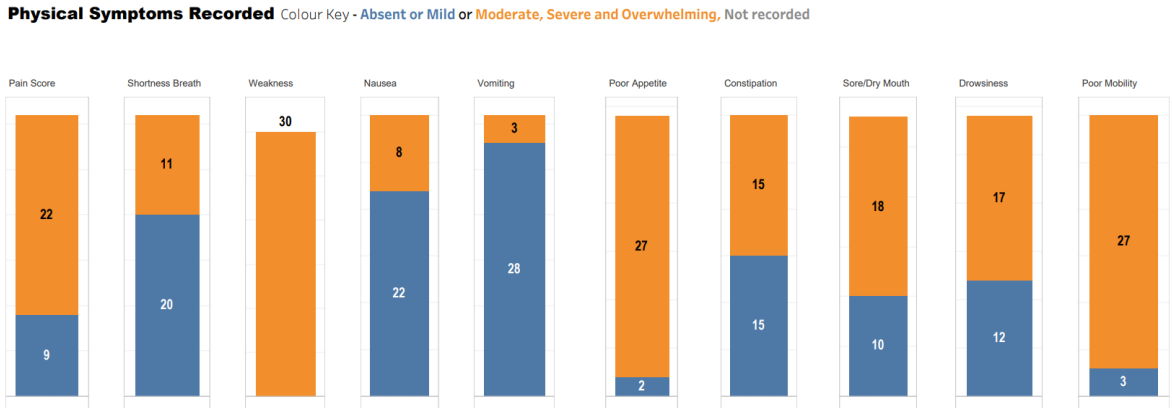
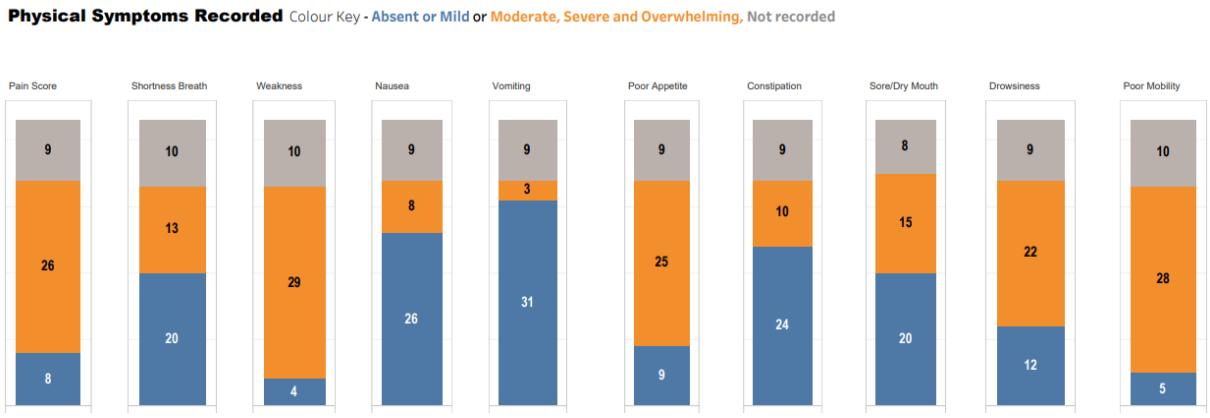


Figure 10: Resolve outcome measures at first assessment of patients admitted to the inpatient unit 01 May to 31 July



4.2 Virtual Ward interventions

The interventions that were delivered by the Virtual Ward during the pilot period are detailed as follows:

A total of 1760 clinical contacts were made (see figure 11); 75% of these were telephone contacts with patients, families and other health care professionals. Including large volume of telephone calls in relation to sourcing medications from local pharmacies.

Attend Anywhere remote consultations accounted for only 1% with reasons given being initial lack of confidence in using this method and the likelihood that compared to consultants most less experienced medical team would feel more confident performing face to face consultations with complex and unstable patients.

Twenty four percent (426) were face to face visits out of which 62% were registered nurse visits and 22% were joint medical and nursing visits. From very early on in running the service, Virtual Ward staff found that joint medical-nursing reviews were optimal, for both face to face and remote medical assessments, as they enabled real time changes to symptom control and syringe driver medications. There is some missing data to note here (see figure 12). This is in line with what was expected to be the case, that a patient would be medically reviewed once daily, be it face to face or virtually. The nurses would then react to calls and make visits as required, usually several times per day and at least twice per day.

Figure 11: Virtual Ward interventions by contact type

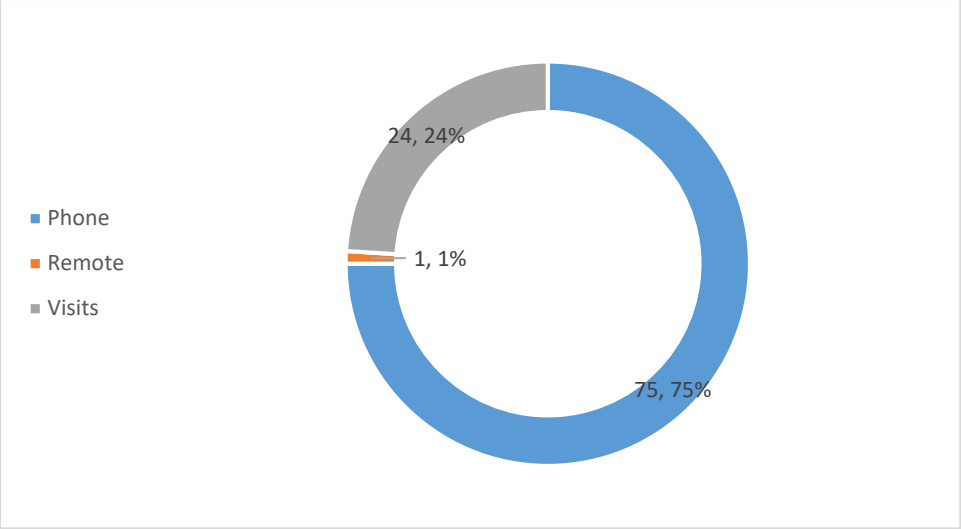
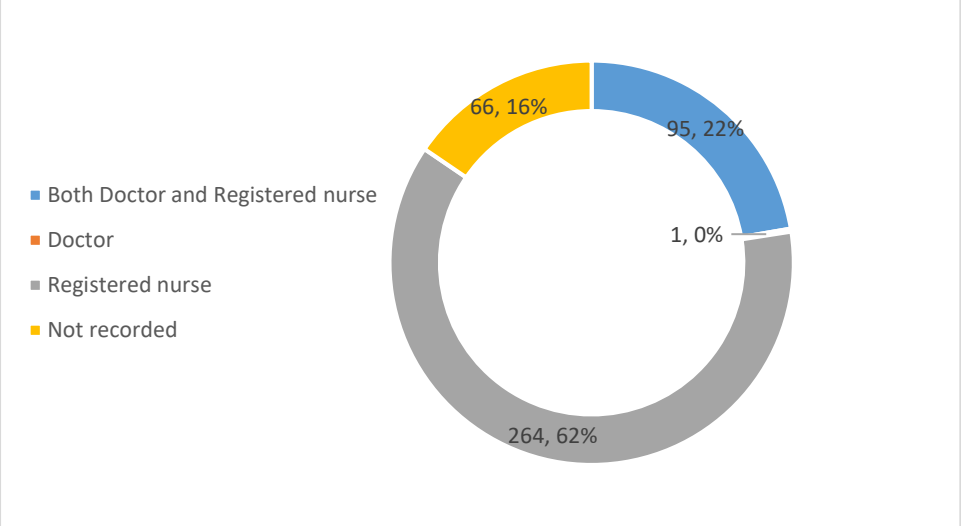


Figure 12: Visits carried out by team category

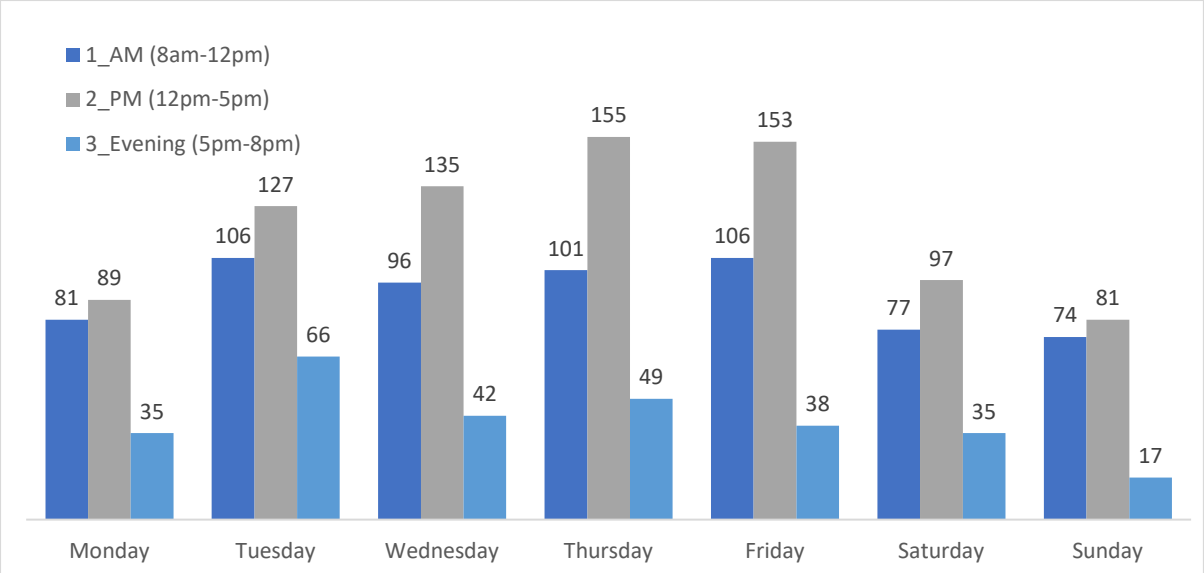


Most interventions took place in the 2pm to 8pm range across all days. The numbers of visits were lowest on the weekend days (average of 172 contacts on Sundays) and increased steadily over the week to peak on Thursdays (average of 305 contacts) and Fridays (average of 297 contacts). Some missing data on times of visits are evident, however the overall trend appears consistent. See figure 13.

This is likely to be influenced by Virtual Ward not admitting patients over the weekend and therefore where deaths or discharges occur at end of week / weekend, it can take several days to fill beds due to being able to admit only one or two people each day.

Patients admitted to an empty bed on a Monday are usually considered to be Unstable or Dying meaning that by the end of the week there will be an increasing number of visits due to increasing care and family support needs.

Figure 13: Day of week and time of day of interventions



4.3 Patient outcomes

Average length of stay in the Virtual Ward was 7.3 days. The length of stay for those admitted to the inpatient unit was longer at an average of 16.25 days.

Twelve (26%) Virtual Ward patients were discharged to the care of the community palliative care team. They had the longest duration of admission of an average of 14 days, the maximum period for Virtual Ward support. Most of these patients required complex symptom management and family support prior to handover. 19 (41%) of patients in the Virtual Ward died after an average of 8.8 days. This diverged from outcomes for those in the inpatient unit as 78% died during their stay.

Of those that were discharged from the Virtual Ward, 13 were admitted to another service. 10 patients were admitted to St Columba's Hospice inpatient unit, 6 of whom had been concurrently on the inpatient waiting list with the Virtual Ward providing bridging support until admission. Two of the 10 patients underwent initial joint medical and nursing review but were not admitted to the Virtual Ward and were supported by cross site communication and signposting to appropriate services. Of the

remaining Virtual Ward patients two were admitted to an acute hospital due to unexpected events and in keeping with their wishes. One patient was admitted to Marie Curie Hospice Edinburgh as there was no available inpatient bed in St Columba's Hospice Care.

4.4 Benefits for patients, families and team

Interview-based findings detail the key benefits of the Virtual Ward for patients, families and team as well as the limitations of the Virtual Ward. Benefits described for patients and families were: Place of Care, Effective Symptom Management, Lifting the Burden and Person-centred Communication. Benefits described for Virtual Ward team were: Satisfaction and positivity within the team, Value of medical and nursing teams working in close partnership, Increased communication and partnership working with other hospice services.

4.4.1 Key benefits for patients and families

The Virtual Ward benefited patients and families in numerous ways, as was clear from the reflections given. Key benefits were that the Virtual Ward was able to provide the support that was vital for patients through enabling care to take place where it was preferred or necessary, effectively managing symptoms and by lifting the burden from families. These themes are detailed below.

Place of care

Providing the Virtual Ward in the home environment enabled positive outcomes for patients and their families. The Virtual Ward can facilitate people to die in their preferred place of death; avoid unwanted hospital admissions; and promote partnership working.

The Virtual Ward was able to take account of individual needs and context of patients. This could be through facilitating their preferred place of care or preferred place of death.

> "Tremendous, he got what he wanted, he wanted to die in his own bed in his own home with his family beside him and not to suffer." (Family of patient 2)

> "I think if XX didn't have the option of the Virtual bed service, I don't think she would have come out the Hospice." (Family of patient 11)

> "[We have] been there when the patient died and it's such a comfort to the family. It's happened twice actually that we've been there when the patient has taken their last breaths and the family have just been so thankful." (Virtual Ward Team, FG 1)

> "The Virtual Ward was that missing piece to keep their loved one at home a little bit longer...until they know the time was right to go into the hospice for End-of-Life Care." (Virtual Ward team member, FG 2)

> "some patients have been quite complex but want to be at home... the GP said they would never be able to manage. The District Nurse's couldn't cope with the constant changes [in medication]. [We went in] we were changing meds every day... he died at home." (Virtual Ward team member, FG 1)

Facilitating preferred place of care or death is important for those with palliative and end-of-life care needs, however, as one team member highlighted, doing so can avoid significant ongoing negative impact on family members that can occur when this is not managed.

> "Occasionally you get patients that come into the IPU and one of the hardest things for the family to reconcile with is they feel they've let them down because they wanted to stay at home….or they go into hospital and that can be really difficult for relatives." (Sen team 1)

There were also clear examples where Virtual Ward enabling people to remain in a familiar environment was especially important. These were a patient who was neurodivergent and would have found a change in environment particularly distressing and a man who lived alone and had a deep desire not to leave his cat. In addition, a husband found real value in not having to consider daily travel time to a place of care, the Virtual Ward supported him to spend more time with his wife.

> "...because X is autistic it meant that he can stay in an environment he knows and that he feels safe in. It's very daunting to have to move somewhere or change." (Family of patient 15)

> "it was [the Dr] that went to see him to try and persuade him to come in [to the hospice] but he wouldn't leave his cat. He said he wanted to stay at home with his cat." (Family of patient 17)

> "If she's in hospital... it takes me an hour, with the car, to get from here to the hospital. So [home] is much more satisfactory." (Family of patient 19)

Furthermore, where there was no bed available in the hospice inpatient unit, and a person wished to avoid admission to hospital, then the Virtual Ward could 'step in' to prevent unwanted hospital admission.

> "XX always wanted to be at home, not the hospital, she wanted to be at home." (Family of Patient 3)

> "But saying she didn't want to go into hospital as an acute admission, so it managed to keep her at home until there was a bed that she could go for end-of-life care" (Referrer of patient 3)

> "She wanted to be at home... she definitely didn't want to be in a hospital." (Family of patient 6)

> "…the options were between there were between hospital admission, which he didn't want. Hospice admission, which was his favourite but there wasn't a bed, and just a kind of holding him with the Virtual bed until ab bed became available." (Referrer of patient 7)

> "We've had people who wanted inpatient unit but no beds available, so we kept them at home with Virtual Ward and they said they actually preferred that." (Virtual Ward team member, FG 1)

It is important to consider that a person's preferred place of care may change. Support needs may become too great or complex to be managed at home or indeed someone may be admitted to the inpatient unit and wish to return home. The Virtual Ward has the capacity to be flexible and reactive to needs as they change. Crucial to delivering care in someone's home, is working in partnership with

both internal and external services and families recognised that the Virtual Ward had the potential to liaise with different service providers and to facilitate increased intervention from other services when necessary.

> "I think everyone worked well together." (Family of patient 11)

> "It was just as if somebody gave somebody a gentle tap." (Family of patient 12)

> "It just felt so much more co-ordinated." (Family of patient 18)

The benefit of the Virtual Ward in supporting transitions was demonstrated in the team recalling a patient who was admitted from the Virtual Ward to the hospice inpatient unit for end of life care. It mattered greatly to him that the last time he would leave his home would not be by ambulance. The Virtual Ward team worked in partnership with the inpatient team, supporting his journey from home to hospice by taxi and through to admission.

> "He didn't want [an ambulance] to be the last memory of him leaving his home... it's the little things. Being with him there at that time... we waited with the family until the taxi arrived, then I went to see him later in the ward... that continuation of care... even though we are a Virtual Ward team, we are still part of the hospice as a whole." (Virtual Ward team member, FG 2)

Effective symptom management

The Virtual Ward enabled people with complex symptoms that would have otherwise required a hospice admission, to remain in their home. Effective symptom management was central to this.

> "As the Dr said, the most important thing is to be a step ahead of the pain because if you're Ever behind the pain it's hard to catch up. Pain can run away....." (Family of patient 16)

> "It's hard to see Mum like that, but they have actually helped Mum more than they can probably imagine and it's nice to come in and see Mum settled." (Family of patient 12)

Effective management of symptoms for patients was reported frequently by those involved in delivering Virtual Ward care as well as the Care at Home team that supported the same patients.

> "[the patients] are assessed daily. Their [syringe] drivers can change daily... sometimes twice daily. I think it is quite a reactive service." (Virtual Ward team member, FG 3)

> "we are making changes to medications daily in the home. Patients are settled... we are achieving peaceful deaths." (Virtual Ward team member, FG 3)

Families attributed this to the specialist intervention from the Virtual Ward team, the daily medical reviews. Specifically, the ability to telephone a nurse at any time, safe in the knowledge they will come out to provide support, was highlighted by families.

> "when [the nurses] were here and they did want to change my Dad's medication they were here, they were on the phone to the Dr's and the Dr would change something." (Family of patient 20)

> "when I called, they didn't hesitate. I mean they even thought to bring a supportive cushion [with the pain relief]." (Family of patient 14)

> "[the Virtual Ward team] explained things, what they were doing, what they were giving him, why they had doubled up this and sorted that one out." (Family of patient 2)

The responsiveness of the Virtual Ward being put into place was an important aspect in enabling people to remain at home when that was their preference. Families and patients described how the Virtual Ward was very quickly able to respond to the needs and once the decision was made for its intervention, the service was put in place very quickly.

> "They came out literally within a day, very quickly." (Family of patient 10)

> "Yeah, it was really interesting because all of a sudden someone was trying to help me." (Family of patient 15)

The Virtual Ward team also highlighted the positive impact of their availability, supporting the team to respond to patients and family members in a crisis in a timely manner.

> "There's few emergencies in palliative care people say but from patients and family's side quite often it feels like an emergency and a crisis to them." (Sen team 1)

> "It's not just the nurses they have direct access to their doctor as well, I've heard a few patients talk about that. They know exactly who they need to speak to and they are available." (Care at Home team member, FG 6)

> "As a team, we support each other...we all have skills....we've grown a lot in that sense." (Virtual Ward team member, FG 2)

Lifting the burden

The reflections of family members described the support of Virtual Ward as 'lifting the burden' of responsibility from them. The team were able to coordinate care and provide an overarching experienced, professional presence that allowed family members the relief of knowing their loved ones were safe whilst easing the stress from themselves. This provided both patients and family with a feeling of emotional safety at a time of crisis and struggle.

> "If my Mum feels safe then other things can fall into place." (Family of patient 16)

> "I think it's brilliant… I feel a massive weight has been taken off me." (Family of patient 19)

> "We would have been lost without them to be truthful." (Family of patient 12)

Lifting or sharing this weight of responsibility of coordinating care from family carers, allowed them to be with their dying relative in a relationship as a family member as noted by those in the Virtual Ward team.

> "We're trying to take the burden off [families]... allowing them to just be with their relatives." (Virtual Ward team member, FG 1)

> "Once the Virtual Ward team had come in there was a lot of comfort. And I think partly because I felt comforted, and I think I am sure he understood. So, I felt that it gave comfort to the whole household actually. Which I think is absolutely fantastic." (Family of patient 10)

The Virtual Ward team reflections outline feedback from families and patients describing a sense of safety for their loved ones and for themselves.

> "There's changes being made as soon as they are admitted, changes in medication and whatnot and so you are having a direct impact on people's quality of life be it however short… and getting people more settled and feeling safer…. I've heard that from a lot of feedback, patients and family feel they are safer." (Sen team 2)

> "[patients feel] safe, supported. I think they feel that there's an omnipresence of our service there. We are more present, we are there." (Sen team 2)

This sense of relief for families was in part attributed to their confidence in the team's specialist experience/role.

> "One the Virtual Ward team were there, I thought I know we are on the home run now. And to me that was hugely comforting... I needed that extra level of support; I needed that reassurance that he was going to be made comfortable." (Family of patient 10)

> "It was like a bit of a weight was lifted as somebody medical was listening to what we had to say as a family and our worries as a family. The listened and responded to every question we could have asked. It was just tremendous." (Family of patient 12)

> "the [families appreciate] the specialty we provide... from offering ice poles to medication - when to take, how to take. Or starting steroids." (Virtual Ward team member, FG 3)

As explained by one senior Virtual Ward team member, the support that families can gain from the presence of experienced palliative care team and their confidence in them is key to Virtual Ward support.

> "[Doctor who set up a Hospice at Home service at another hospice] said that presence of experienced hospice team, it was often that that made the difference to not just patients and families but to DNs and GPs too. That presence and calmness and just knowing there was someone there that's seen this before." (Sen team 1)

> "The patient had not long passed away, so we went in and whilst we were in the Virtual Ward nurses were in to remove the driver and stuff. It was nice to have trained nurses that were able to explain the catheter coming out and the syringe driver coming out and we did last offices, and it was quite nice working together." (Care at Home team member, FG 7)

> "I think the families found comfort having both teams there as well." (Care at Home team member, FG 6)

Ultimately those delivering the Virtual Ward care firmly believed that they were able to ease the burden for patients and families such that they were achieving peaceful deaths at homes.

> "[The aim was] to ease the burden, ease the pressure on family and patients that didn't want to be admitted to another service, that wanted to stay at home – are we achieving this? Yes! Easing the burden on community team with these patients that we are trying to get them somewhere safe – are we achieving that? Yes." (Sen team 2)

> "We have achieved the aims we set out at the start. We are achieving peaceful deaths for our patients." (Virtual Ward team member, FG 2)

Person-centred communication

Underpinning the relief and support that families and patients described was the manner in which the Virtual Ward team communicated with them. This was detailed as frequent, open and engaging person-centered style where information was explained, and questions answered clearly and without jargon.

> "Amazing communication, not just those visits in the morning, but regular phone calls." (Family of patient 16)

> "She [the Dr] got a chair and she sat next to him." (Family of patient 13)

> "They explained what they were doing before they did anything. It wasn't in jargon you couldn't understand. Even though it's the doctor telling you they were on a level." (Family of patient 12)

> "I could ask the nurse anything, they always have an answer." (Family of patient 15)

Families further praised the team's kind, attentive, reassuring approach.

> "Just truly tremendous in sense of the care, the attention, the interaction, not just the visit each day but the phone calls." (Family of patient 16)

> "Carers were wonderful." (Family of patient 6)

> "I don't think the people can be improved on – tremendous!" (Family of patient 12)

One relative of a patient described how their experience of the Virtual Ward related to what they considered was the care that would be expected in a hospice inpatient unit, simply stating the direct equivalence.

> "This is Hospice Care." (Family of patient 6)

Also noted was the time that team spent with family members.

> "Do you know, even more, it wasn't just caring for the patient, it was deeply recognised that there was a family that needed care and attention. The team were absolutely wonderful." (Family of patient 6)

Virtual Ward team noted the comfort and support that they felt they offered to families when they could present at the moment their loved one died.

> "If you are there when the patient dies… it's nice… just like in the ward. Family can help with last offices if they want… (Virtual Ward team member, FG 1)

> It's happened a few times actually when I've been there, the patient has died and the family have taken so much comfort in that." (Virtual Ward team member, FG 1)

Families generally described the support found strength in the relationships they built with the team.

> "I felt supported... I had established… relationships with the team… but above that I had friendship." (Family of patient 6)

> "We get to know [patients and families] a lot quicker in the Virtual Ward service than in the inpatient unit." (Virtual Ward team member, FG 1)

4.4.2 Key benefits for the team

It was clear from the reflections shared that the Virtual Ward benefited the team in numerous ways. Team satisfaction and positivity is high. The Virtual Ward provided the team with the opportunity to work in partnership with hospice doctors, other hospice teams and external teams. Team value this increased communication and partnership working, linking it with their high levels of satisfaction at work.

Satisfaction and positivity within the team

The focus groups (FG) and interviews with the team that were delivering the Virtual Ward detail the benefits that they experienced from being part of it. These were through general satisfaction and positive team working within the team, across teams and with the primary care services.

> "My job satisfaction has gone through the roof." (Virtual Ward team FG 1)

> "It's just a privilege to go into people's houses and for them to be able to accept you." (Virtual Ward team member, FG 3)

> "although working on the wards is like really rewarding this is just on a whole other level." (Virtual Ward team member, FG 2)

> "Team satisfaction has been [really high]." (Sen team 2)

This positivity, of the Virtual Ward team, appears to have also infused into the wider community services that work alongside them and share the same geographical space.

> "There's a….overall there's a much more positive vibe down here since the Virtual team have been there…because they're loving it….and it just trickles into everyone else." (Sen team 4)

> "It feels like a fantastic sense of achievement for everyone that's been involved." (Sen team 1)

> "I always felt the team came with caveats "who do I call for this – you call the DNs" It's quite complex, who is leading what who you can call for what, for patients or families to get their head around." (Sen team 2)

> "There's just something about eyeballing a patient, a family, a carer and saying this is what we are going to do and we are going to do it as opposed to having spent an hour with you now, I've sold the service, I've talked you through everything….but actually I'm not the person you are going to be calling when you are in dire…… Whereas you can say one of our team will be here for 12 hours a day, call us and we will come, we will sort this out and we will stay with you until it is sorted." (Sen team 2)

The Virtual Ward team highlight that collaboration with external services is crucial to the success of the Virtual Ward team.

> "Working in partnership with DN's, Communication with outside has been good." (Sen team 2)

> "Our daily meeting with the District Nurses is vital. We're trying to get Marie Curie to join as well, the overnight service. Discussing patients and making sure communication is good with everyone involved. Liaising with GP's is all done via email and telephone. Speaking to pharmacy. A lot of it." (Virtual Ward team member, FG 1)

Value of medical and nursing teams working in close partnership

The nurses in the team later succinctly described how they value working in partnership with hospice doctors to support their patients.

> "We make a plan [with the Doctors] in the morning to see who needs [to be seen] face-to-face and who would benefit from a Virtual review...the Doctors ask for our opinions a lot more.....more of a joint decision/joined up working [approach]….it feels nice." (Virtual Ward team member, FG3)

> "Having the Doctor there is so vital to have these patients at home." (Virtual Ward team member, FG1)

Increased communication and partnership working with other hospice services

The Virtual Ward team, as well as other teams within the hospice, identified an increase in communication between hospice services. They recognised the potential positive impact partnership working has on the delivery of person-centred care.

> "Certainly the communication seems to be open….like they do their morning call every day with the district nurses and we hop in at the end so there's, they're definitely communicating what each other need." (Sen team 4)

> "They are just along the corridor. I've been coming off the call and just going up to them and saying what have you got today, where are we at. Because it might be, what's happening was they were going out to the same patient at 10am that we were so if you just open up that conversation then we don't need to go and we can go look after someone else. So it has been a real positive move for communication as well." (Sen team 4)

4.5 Limitations of the Virtual Ward

The reflections given by patient family members and from staff involved in focus groups (FG) and interviews, highlighted limitations within the Virtual Ward. Some patients and families did not always feel fully informed about the service and some families encountered environmental and logistical challenges.

4.5.1 A desire for increased information about the Virtual Ward

It was important for the patients and families to understand what the Virtual Ward provides. Some patients and families feel overloaded with verbal information and unable to retain details given to them by the Virtual Ward team. This could lead to confusion. Some families could find the title of the 'Virtual' Ward confusing, and at times, misleading, and the team also recognised this.

> "I got very confused as to who I was to phone. Was it hospice? Was it Marie Curie? Was it District Nurses? Was it rapid response? What time was it? You have to watch for people going on shift/off shift. No you don't phone them between 4 and 7, that very confusing to me." (Family of patient 13)

> "I don't know what I wanted it to be called, but I didn't want it to be Virtual. Because I felt like we were playing this silly video game" (Family of patient 13)

> "Folk see it as an online distant substitute. Colloquially people think of Virtual reality." (Sen team 1)

> "I think the name is confusing for patients." (Virtual Ward team member, FG1)

> "there are services in hospitals with the word Virtual in them.....the fracture clinic. They do everything Virtually, do not see patients [face-to face]....that's where the confusion comes." (Virtual Ward team member, FG 1)

It was important for some patients and families to know what (if any) alternative options to the Virtual Ward are available to facilitate their understanding of why the Virtual Ward is being offered. A small number of families described feeling uncertain why the option of the Virtual Ward was being offered and speculated if it is because the number of beds in the hospice has been reduced.

> "I mean you are short of beds that is part of the problem." (Family of patient 6)

> "I am struggling to differentiate between the… services." (Family of patient 4)

> "Maybe how its's presented, going forward, maybe there could be some reflection on how present so it's not as a lesser option." (Family of patient 16)

The lack of awareness of the service was noted by some of those in the Virtual Ward team who highlighted the potential benefits of addressing this issue.

> "not all community teams are aware of us....I know they had information sent out to them but.....they still don't really understand what we do. There's probably patients out there that could have used the service but because GP's don't know....I've noticed a bit of that." (Virtual Ward team member, FG 1)

> "We need to consider communicating properly or better about what we do. Less referrals than expected probably because they don't know what we do." (SEN team 1)

4.5.2 Logistical and environmental challenges

Logistical issues regarding pharmacy supplies were highlighted by both the Virtual Ward team and family members. This included issues with liaising with GPs and pharmacies, reports of some long waiting times for prescriptions resulting from finding pharmacies with the available supplies as well as family members having to leave the bedside of their loved one to collect their prescription. Supporting families with this was seen by the Virtual Ward team as a necessary, yet time-consuming part of their role.

> "Patients hunting around for medications and waiting when you know it's [in the hospice] in a cupboard." (Sen team 1)

> "It was very hard to go overnight with tablets, but I think they got that sorted out. They sort of arranged with certain pharmacies as a hub because they had problems getting the meds…" (Family of patient 9)

> "[nurse X] called pharmacy 32 times... which is mental… just to get an answer....Something comes out of that call and you have to do something else and then phone pharmacy again." (Virtual Ward team member, FG1)

> "We act on behalf [of the families] to co-ordinate a lot… it's time consuming... emails... phone calls... I was surprised to see." (Virtual Ward team member, FG2)

> "Liaising a lot with outside agencies… quite time consuming." (Virtual Ward team member, FG1)

Families questioned if it is feasible to offer the Virtual Ward to everyone who would benefit from it. Two family members highlighted the space required in the home to accommodate all the equipment, with one suggesting that some households may not be sufficient to accommodate the Virtual Ward.

> "It's a house that's not set up for easy transfers or equipment and stuff." (Family of patient 11)

> "You are going to be involved. People from a total cross section of society… if you are living in a flat somewhere with two bedrooms then it would be an entirely set of circumstances." (Family of patient 6)

Families and team highlighted challenges they faced because of covering a large geographical area. Namely, it can take the Virtual Ward team a while to arrive at the patient's home to administer breakthrough medication for symptom relief. One Virtual Ward team member highlighted the relationship they developed with the District Nurses is crucial in instances like this, where the Virtual Ward team could call the District Nurses to ask them to step in or vice versa. Both services worked in tandem to provide urgent medication in the fasted possible time.

> "we cover such a large extended area." (Virtual Ward tam member,. FG2)

> "If you've got a patient in South Queensferry and another in Dunbar and you get a phone call to say you've got to go, somebody else is caught up... the traffic is horrendous." (Virtual Ward team member, FG1)

> "I asked them to go and give a breakthrough early in the morning once... they were [on the other side of Edinburgh], just in case I got caught in traffic." (Virtual Ward team member, FG1)

Some families experienced an initial struggle with welcoming new team from 'yet another service' coming into the home with new unfamiliar faces. Some families described how it could be difficult letting go of both pre-existing relationships with District Nurse's, and, when the Virtual Ward was no longer deemed necessary, their relationships with the Virtual Ward team.

> "At the latter end we had people coming and going. I kind of lost track of who they belonged to, to be quite honest." (Family of patient 2)

> "You form very strong bonds very quickly, but the necessity of the service means that they have to move on." (Family of patient 16)

> "I think sometimes [patients and families] get really overwhelmed [with the volume of people entering their home]...on the whole people are happy." (Virtual Ward team FG1)

Some families reported that the Virtual Ward evoked feelings of guilt due to calling out 'busy' nurses to their home. The audibility of the Virtual Ward team phones ringing could create this feeling for patients and was anecdotally similarly commented on by the Virtual Ward team members.

> "I felt very guilty because I knew that time was at a premium and I knew they were too busy. I heard them having phone calls constantly to people…" (Family of patient 13)

4.6 Feedback from primary and secondary care providers

To further evaluate the Virtual Ward, we requested feedback from primary care and secondary care teams. This included General Practitioners (GPs), District Nurses (DN's), care/nursing homes and hospital palliative care teams (HPCT). The feedback has been brought together under four key areas: Patient care, Communication, Information, and Impact on workload. Evaluative scores for the first three areas ranged from 1 (very poor) through to 5 (very good), whereas the perceived impact of the Virtual Ward on workload of primary and secondary care services was evaluated with scores from 1 (added to workload) through to 5 (reduced workload). Feedback forms were received back from 3 GPs, with 3 additional GPs sending written free text feedback instead, 6 DN teams, 2 care homes and one HPCT.

4.6.1 Patient care

GPs evaluated the impact of the Virtual Ward on patient care as largely positive with 2 GPs scoring 5 and one GP scoring a mix of 3 and 4. However for the 3 GPs that only gave written feedback this was highly positive. GPs praised the care that their patients received,

> "The family of this patient were very appreciative of the service and I think it avoided the need for admission and allow her to die at home." (GP4)

> "Patients receive fantastic care from dedicated team of palliative care specialists. We GPs would be more reactive in our approach to care rather than pro-active as in your team." (GP5)

> "We have certainly noticed an improvement in the symptom control and care the patients and their family received." (GP5)

DN teams scored this highly with predominantly 5s with one 4 and one 2 (detailed below) across all questions relating to patient care. They highlighted the promptness and level of review given as well as the degree of support provided and the effective symptom management.

> "Quick action, comprehensive review" "initial symptom management." (DN6)

> "Reduced workload for my team, good management of patient's complex symptoms and end-of-life care, MDT approach. Good experience for patients and families." (DN5)

> "Patients and families well supported." (DN2)

The single exception where a DN team had scored 5 for one of their two patients for non-physical symptom support but for the other they gave a score of 2. Written comments addressed the specific issue detailing that while initial symptom management was positive that problems arose following discharge.

> "This felt like a failed episode of care as [the] patient developed worsening symptoms post discharge from service." (DN6)

Care Homes – both gave scores of 5 for the overall support provided and physical symptom management provided by Virtual Ward for their resident with scores of 3 and 4 for non-physical symptom management.

> "I believe that the level of support that the team provide cannot be questioned." (Care Home 1)

> "the overall working collaboration with the hospice care team certainly provided reassurance and confidence within the team…" (Care Home 1)

> "We had brilliant support from SCH CPCT Virtual bed service…Virtual bed service was professional." (Care Home 2)

HPCT team were unable to evaluate the support of the Virtual Ward team in the care of their patient as they were no longer looking after them however, they detailed the need and appropriateness of the service for allowing the person the option of returning home and avoiding admission.

> "The Virtual bed service was suggested to me as an option by access team. I was then able to discuss with patient and daughter and they were keen for the level of support that could be provided. They were keen to avoid inpatient admission to hospice and this gave an alternative option." (HPCT)

A medical consultant also sent the following feedback directly to our medical team.

> "I just wanted to thank you for all the support in the discharge process. It made a huge difference to arranging such a complex discharge to be able to offer a Virtual bed and more intense support from the hospice to the family, DN team and GP. I think it also really reassured the ICU team who aren't used to discharges for end-of-life care."

4.6.2 Communication

GPs were largely positive about communications with the team with 67% scoring 5 and 33% scoring 2, however those that gave free text feedback, only one mentioned communication which was positive.

> "From contacts via email etc before [patient] went in [to the hospice in-patient unit], communications and care from virtual service appear to have gone well." (GP5)"This was overall excellent service in all aspect, very responsive and engaged by email contact daily." (GP3)

> "The feedback in general was positive and support provided was good, although there was a couple of comments about the care not being 24 hours." (GP6)

Feedback from the one GP that offered a score of 2 for this appears detailed the issue as follows.

> "Please communicate better with GP regarding the service. We were informed that the patient died the next day." (GP2)

DNs appreciated the good communication with the Virtual Ward team scoring this 78% 5 and 28% 4. Their responses detail the communication and also the collaboration with the Virtual Ward.

> "The morning teams meetings was really good and very helpful." (DN1)

> "Communication between DN team and Virtual Ward was very good especially with morning huddle." (DN2)

> "Collaboration with specialist team at Virtual Ward meeting supports team working; sharing knowledge; prompt trouble shooting for symptom management." (DN3)

> "I feel this has been a seamless transition and a welcome development in the community. Our team and patient group have benefited and having the enhanced approach of both DN's and Virtual Ward team." (DN4)

> "I have found that the Virtual Ward service and the DN service complement one another." (DN3)

> "Virtual Ward has been a really good addition to community palliative care and an invaluable support to district nursing teams. It's great to see community palliative care expanding resources to provide specialised care to people at home, preventing admissions etc." (DN5)

Care Homes both offered scores of 5 (very good) regarding communication with the Virtual Ward team. HPCT Gave a score of 4 regarding communication with the Virtual Ward team.

> "Communication with the service directly was really helpful once I was able to access them (took 48 hours to be able to speak to them directly)." (HPCT)

4.6.3 Information

The area where the less favorable feedback was received was regarding how helpful the information about the Virtual Ward had been.

DNs - While 72% allocated this a score of 4 or 5, 28% of DNs scored this as a 3. DNs detailed a need to have written information available for patients and families and clear guidance on who to contact and when.

> "Clear instructions to patient /relatives about who to contact if the need arises." (DN2)

> "Possibly create a leaflet to signpost team and relatives to contact numbers and we can keep in the orange notes." (DN3)

GPs gave mixed feedback regarding the information they received with one score of 5, one 3 and one of 2. Issues were also detailed as follows:

> "We weren't necessarily aware that she was under the Virtual Ward initially. This perhaps could have been better communicated so that we were aware of the appropriate points of contact." (GP4)

> "Delegation of responsibilities needs to be clear. If the patient/family have any issues whilst under the Virtual Ward, should they be calling the hospice? If they call the GP should we be redirecting them to the hospice." (GP2)

Care Homes scored one 5 (very good) and one 1- (very poor) on information given about the service which was explained as follows.

> "There was no information provided about the service we were just made aware that the resident was part of the service. All communication about the service was verbal. It would be good to have written information to share with the teams." (Care Home 1)

HPCT Gave a score of 4 regarding information they were given about the service.

4.6.4 Impact on workload

GP feedback scores stated that the Virtual Ward either reduced their workload with 67% giving a score of 4 out of 5 for reduced workload and 33% scoring 3 out of 5 suggesting no difference to their workload. One GP offered free text as follows.

> "the new Virtual Bed service has been a real help to we GPs." (GP5)

GPs, however, did mention issues around medication prescriptions in multiple changes and delays in getting this in place that could impact on workload

> "I think occasional confusion and overlap information on some medication updates when changed and not always up to date prescription plan if only a few hours between request or at a later part of the day or week (Friday etc)." (GP1)

> "Only downside is in relation to prescribing. There is a delay or lag between recommendation for a medication change made by your team and it being implemented. By the time the change is brought in (sometimes 3 days later or 5 days if weekend involved) then the plan will have changed again with another medication, leading to confusion…. I don't have an answer to how this could be speeded up unless your team took on the prescribing yourself." (GP5)

DNs feedback scores stated that the Virtual Ward reduced their workload with 42% scoring 5 and 57% 4. DN feedback detailed the impact that the Virtual Ward had on their teams beyond the issue of workload. DNs highlighted how they benefitted from joint working and learning opportunities and their desire to continue to work in this way in order to gain and to retain skills.

> "I like that we can learn and share knowledge when extra support is required in times of complexity." (DN3)

> "[having the] Virtual Ward team has enabled us to learn from each other whilst providing essential patient centred and compassionate care for our end-of-life and palliative patients." (DN4)

> "I'm a V300 prescriber and passionate about palliative care/ looking to expand palliative prescribing so I would be happy to still be involved with patients while under Virtual Ward for my own experience and development, maybe more of a joint working approach?" (DN5)

> "[the service is most suited for] complex patients [but that it was] still beneficial for DNs to manage this process to not deskill." (DN6)

Also noted was the way the Virtual Ward involvement was set up and how it allowed the team to integrate with their colleagues.

> "I think having the team join the DN teams in advance of the setting up of the Virtual Ward team (for shadow shifts) was a very valuable addition to our teams as well as gave us the opportunity to embed our Virtual Ward colleagues into our working day." (DN4)

Care Home feedback similarly gave scores of 4 for having reduced their workload.

HPCT did not score this field.

Formal feedback was not collated from the Marie Curie Rapid Response team however the service lead volunteered their view during a meeting stating that the Virtual Ward and Marie Curie Rapid Response service work closely together as one team.

[5] DISCUSSION

This report outlines the evaluation findings of the three-month pilot of the Virtual Ward at St Columba's Hospice Care. The profile of patients that were admitted to the Virtual Ward, details of the service provided and outcomes are included. In comparison with a prospective study detailing who is admitted to Hospice inpatient units in Edinburgh (Haraldsdottir et al. 2023), those admitted to the Virtual Ward were of a similar age demographic to those admitted to the inpatient unit, however, Virtual Ward care has been provided for a greater proportion of those with non-malignant conditions. This suggests that the service can better reach those that traditional inpatient hospice services may be less able to.

Patients were mostly referred from St Columba's community palliative care service. However, with increasing awareness of the service it is intended that primary and secondary care services will increasingly consider referral to the Virtual Ward as an option for their patients. This is particularly relevant for those patients who wish to return home but whose needs are considered by hospital palliative care teams to be too great to manage at home. The increased support that Virtual Wards can provide has been shown here to be able to bridge the gap and facilitate hospital discharge where it previously would have not been possible.

The Virtual Ward team supported people with a wide range of symptom burden, across different phases of illness and many who were functionally highly dependent, or bed bound, demonstrating the capacity of the service to care for people with complex and varied needs. Comparison with patients admitted to the Inpatient Unit over a three-month period suggests that males and females are admitted comparably to both, that less patients under 60 are admitted to the Virtual Ward. It may be that Virtual Ward patients experience a higher symptom burden, but this conclusion is limited by incomplete data.

A clear difference between the Virtual Ward and inpatient unit is from the source of referrals. Those admitted to the inpatient unit are predominantly referred by hospital teams compared to those admitted to Virtual ward being referred predominantly by the Hospice Community Palliative Care team. This seems likely to be influenced by the level of awareness of the Virtual Ward within the Hospice's own services. Given time, as primary and secondary care colleagues become more aware of and confident in the Virtual Wards impact, referrals from primary and secondary care should increase.

The final difference noted was the far greater likelihood that those cared for on the Inpatient Unit would die compared to the Virtual Ward. This may be unsurprising as patients whose support needs have become too complex to manage at home are more likely to be close to end-of-life.

An evaluation of the experience of receiving care from the Virtual Ward has been gathered through reflections of patients and family members. Reflections of team members involved in delivering the service, as well as primary and secondary care colleagues offer an understanding of the experience of providing the service as well as professional evaluations of the benefits and limitations for patients and families.

These reflections demonstrate tangible benefits in enabling people to be cared for at home if that is their wish, or in offering transitional care for those awaiting a bed in the hospice inpatient unit. The Virtual Ward team have been able to effectively manage complex patient symptoms in their own homes and to support patients and their families at the end-of-life. Such support has had the effect of lifting the burden of responsibility from patients and families.

Responsibility held by family members to navigate the confusing landscape of a multitude of services could be handed over, fully or partially to the Virtual Ward team. Many of the team described this as almost an exhale of relief from all concerned. Knowing that experienced palliative care team who had 'seen this before' were present or available also offered profound reassurance for people. The person-centred manner in which patients and families recounted the Virtual Ward team interacting with them also aided the introduction, acceptability and success of this unfamiliar service. From the reflections of patients and family members well as informal feedback that they have sent, the majority outline high satisfaction with the Virtual Ward. Less favourable feedback has been minimal and leant towards neutral rather than negative, with issues raised generally surrounding the name of the service and the information communicated about it at the start.

For the Virtual Ward team as well as those working alongside them, the new service has been a resounding success. The team reported in interviews and focus groups, and repeatedly anecdotally, huge increases in their job satisfaction. This enthusiasm has been infectious and impacted the teams that they work closely with. The 'buzz' is palpable on entering the corridor where the teams are based. Team working across disciplines within the Virtual Ward team as well as with outside health care services has been another source of satisfaction for all, bringing a sense of cohesion in working towards a superordinate goal of caring for these patients.

Finally, feedback from primary and secondary care services offer the perspective from those outside the organization for whom the Virtual Ward will also have an impact. It was considered crucial, from inception, that a key outcome of the Virtual Ward would be, at the very least, to not increase the workload of these services that are already stretched beyond levels known previously. However, despite the increased prescribing turnover that having patients on the Virtual Ward created for some GPs, from those that offered feedback, we can comfortably say that the Virtual Ward was generally able to reduce the clinical workload of GPs and District Nurses whilst not adversely affecting the team at care homes. Feedback from these teams regarding the quality of care provided has also been positive.

For some patients and families, there was a perceived lack of detailed information about the Virtual Ward service. Communication with the Virtual Ward team was largely reported as positive, there was a desire for improved communication with GPs regarding their patients and specifically in relation to medication changes. Given the potential for frequent alterations in medications or the dynamic nature of the patients in the Virtual Ward, real time updates with the primary care provider are essential. It is noted however, that the current use of many different digital patient recording systems across primary and secondary care, that do not 'speak to each other' makes this challenging.

Aside from some issues around understanding what the services involves through the information provided and some confusion surrounding the name of the service as 'virtual', the main limitations

highlighted about the Virtual Ward relate to practical difficulties in prescribing and obtaining medication for patients and the difficulties that can occur when the team are covering large geographical areas.

5.1 Strengths and limitations of the service evaluation

A strength of the service evaluation was in the prospective manner that data were collected that allowed real time evaluation of services as they were happening. A further strength is the comprehensiveness of the qualitative data collection surrounding the cases of 20 patients, with only one participant declining to take part, as this covered nearly half of all those admitted to the Virtual Ward in the time period. Including data from the admitting clinicians and from those delivering the service offered a wider perspective on the individual patient circumstances as well as a broad contextual understanding of the service. Finally, feedback from primary and secondary care services allowed the Virtual Ward to be situated in wider context with broader impacts considered.

Limitations of the evaluation pertain to the lack of directly comparable data from the inpatient unit: data from the same time frame of the pilot Virtual Ward was not available and there were also minor differences in how data coded and collated by the two services. Some incomplete data around AKPS scores in the inpatient unit and regarding face-to-face Virtual Ward visits also limit the evaluation findings. The relatively low response rate from GP's which, although may be a product of positive response bias, it is equally possible that negative experiences would have also triggered responses, yet these have not been received.

5.2 Conclusions

The service evaluation of the three-month pilot of the Virtual Ward provides evidence of the service's introduction and its overall success. The service has enabled people with complex palliative and end-of-life care needs to be supported and cared for in their own homes, if that is what they desire. The Virtual Ward was able to support family members at their time of need and to relieve the physical and emotional burden that palliative illness and dying can entail. The team have experienced increased job satisfaction from this care approach and have been able to build positive relationships with, mostly, effective communications with primary care services to work jointly towards caring for patients. Primary care services have been supportive of the Virtual Ward, which they do not consider to have increased their workload and in many cases feel that it has been reduced. Informal feedback suggests that the medical team on call at the hospice and the Marie Curie Rapid Response service are similarly supportive.

Key issues that remain to be resolved are firstly around the confusion that the term 'virtual' in the service name can engender and in effectively communicating what Virtual Ward care is with detailed written information needed for patients, families and primary and secondary care services. Secondly, finding solutions to difficulties in prescribing, including appropriate communication with GPs regarding medication changes and sourcing medication in a timely manner would increase the effectiveness of the Virtual Ward. Finally, communication with GPs could be improved upon.

Going forward, the Virtual Ward would appear to be able to achieve the aims that it set out to meet and to aid St Columba's Hospice Care in adapting to a changing world and adequately providing for the needs of the community that it serves.

5.3 Recommendations

This service evaluation will inform future directions of the Virtual Ward and the wider delivery of hospice at home at St Columba's Hospice Care. Identified recommendations and key areas of learning include the following:

- Options for developing the prescribing role of the Virtual Ward team should be considered.
- Options for enabling more timely access to medications from pharmacy suppliers should be considered.
- Options for enhancing understanding and promotion of the service model for patients, families and primary and secondary care colleagues should be considered. This information should include clarity about who the main care provider is and who to contact for arising scenarios. The importance and benefit of collaborative working should be emphasised.
- Systems for timely communication with GPs should be considered in partnership with primary care teams to find optimal methods that will ensure that GPs remain and feel fully informed about their patients.
- Consideration should be given to changing the name of the service given the association of the word "Virtual" with care provided from a distance.
- Team mobile phones should be turned off or on silent at all times during visits to maximise person centred interactions and avoid the sense of guilt, and busyness this led to when calls to Virtual Ward team were needed.
- The potential benefits of extending the service to include weekend admissions should be considered as this would lead to more timely patient admissions and potentially reduce the variation in activity seen over the week. Furthermore, the hours of service could be reconsidered given that the vast majority of visits were carried out later in the day.

Given that this was a service evaluation was carried out over a three-month period, during which time it was a completely new service for the hospice, for those working on the Virtual Ward team and for associated health and social care services, it would be pertinent to carry out further evaluation of the Virtual Ward when it becomes more established. At this time it would be helpful to repeat the comparison of symptom burden between admissions to Virtual Ward and admissions to the inpatient unit.

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[7] APPENDICES

Appendix 1

Table 2: Details of patient/family interviewed

Age	Gender	Diagnosis	Referral reason	Days in service	PPD	Actual PPD	Interviewee	Interview length	Reason finished
76	Male	COPD	EOLC/ Symptom control	2	Home	Home	Wife	14	Deceased
72	Male	CUP-Parkinsons	EOLC/ Symptom control	8	Home	Home	Wife	23	Deceased
42	Female	Pancreatic Ca	EOLC/ Symptom control	1	Home	Home	Husband	20	Deceased
71	Male	CJD	EOLC/ Symptom Control	3	Not discussed	Nursing Home	Wife and Daughter	27	Deceased
49	Male	Multiple Myeloma	Symptom management	3	Not discussed	Hospice	Wife	8	Transferred to Marie Curie Hospice
79	Male	Critical Limb Ischemia	Symptom management	12	Not discussed	Hospice	Patient and wife	14	Transferred to St Columba's Hospice Care
61	Male	Intra-hepatic Ca	EOLC/ Symptom control	1	Home	Home	Wife	20	Deceased
80	Female	Abdominal Ca	Symptom management	4	Home/ Hospice	Hospice	Husband	31	Transferred to St Columba's Hospice Care
61	Female	Bladder Ca	EOLC/ Symptom control	2	Home	Home	Husband	19	Deceased
80	Female	Huntingtons Disease	Symptom management	14	Home	Home	Husband and son	17	Symptoms control better - discharged
86	Male	Lung Ca	EOLC/ Symptom control	2	Home	Hospice	Sister	15	Transferred to St Columba's Hospice Care
80	Female	Lung Ca	Symptom management	20	Home	Home	Son	32	Symptom control better - discharged
33	Male	Acral Melanoma Ca	Symptom management	5	Not discussed	Hospice	Patient and wife	13	Transferred to St Columba's Hospice Care
87	Male	Prost Ca	EOLC/ Symptom control	3	Hospice	Home	Wife and son	28	Deceased
78	Female	Breast Ca	EOLC/ Symptom control	4	Hospice	Home	Husband	25	Deceased
81	Female	AA Anuerism	Symptom management	13	Not discussed	N/A	Husband	11	Still in service
95	Male	Brain mets	EOLC	3	Home	Home	Daughter in Law	11	Deceased
69	Male	Gastric ca	Symptom management	13	Not discussed	N/A	Sister	13	Still in service
75	Male	Cholang ca	EOLC	5	Hospice	Hospice	Patient	10	Transferred to St Columba's Hospice Care
72	Male	Glioblastoma	EOLC	10	Home	Home	Wife	17	Deceased

Appendix 2

St Columba's Hospice Care – Research Team

Primary care evaluation and feedback

Now that you have had one of your patients receive support from the Virtual Bed support from St Columba's Hospice Care can you tell us what you have thought about the service?

- **Did the Virtual Bed service help to manage the physical symptoms of your patient?**
  Very poor 1 2 3 4 5 Very good
- **Did the Virtual Bed service help to manage the non-physical symptoms of your patient?**
  Very poor 1 2 3 4 5 Very good
- **How was the support provided for your patient, by the Virtual Ward service overall?**
  Very poor 1 2 3 4 5 Very good
- **How was the Virtual Bed service for your team?**
  Very poor 1 2 3 4 5 Very Good
- **How was the communication with St Columba's Hospice Care team regarding the patient's care and support?**
  Very poor 1 2 3 4 5 Very Good
- **How helpful was the information that you were given about the Virtual Ward service?**
  Very poor 1 2 3 4 5 Very Good
- **Has the Virtual Ward service impacted on your workload?**
  Added to workload 1 2 3 4 5 reduced workload

Can you tell us what you think has worked well with the Virtual Ward service?

Do you have any suggestions as to how we could further develop or improve this service?

Would you like to see more, about the same amount of or less Virtual bed care and support from St Columba's Hospice Care?

Is there anything else you would like to add please this space to let us know?