QR-code Wristbands for critical information: palliative oncology feasibility study Authors: Dr Caitlin Cahill, Dr Elin Harding, Dr Alice Crabtree, Dr Stephanie Sivell and Professor Nikki Pease

Introduction The Care Quality Commission (CQC) describes good care as 'care that seamlessly moves between care settings' [1].To ensure good care, adequate information for clinical decision making is essential. Many patients in the last year of life will transfer between primary, secondary and unscheduled care settings via 999 emergency services.

Current systems used in the UK to provide time critical information to unscheduled care providers include: the 'message in a bottle' system; Recommended Summary Plan for Emergency Care and Treatment (ReSPECT) forms; and the sharing of advance care plan documentation. On discussion with paramedics and clinical nurse specialists, these systems are reported to not be available when required and lack capacity for dynamic updates [2, 3].

Following collaboration with paramedics, palliative care patients and specialist nurses a QR-code wristband was suggested as a progressive method to enable the sharing of this critical information [2, 4, 5].

The proposed method involves the patient wearing a wristband with a QR-code (Figure 1). When scanned, this allows access to an individual patient website. A 4-digit PIN is required to view the information: which can be found on the internal surface of the wristband when removed.

We aimed to assess the acceptability of QR-code wristbands by patients receiving palliative- intent oncological treatment.

Methodology

We designed a feasibility study to assess the acceptability of the use of QR-code wristband with patients across the following criteria:

Recruitment criteria: 40 participants (estimating 60% of patients referred to and reviewed by palliative care team being eligible in terms of prognosis and ability to consent). It was discussed that the project shouldn't progress without review, if enrolment <50% of the target, due to financial and resource burden of insufficient recruitment.

Adherence criteria: ≥40% wearing the wristband "full time" defined as equivalent to wearing a watch. Due to the novel technological intervention within the medical setting r, the adherence criterion was reduced to ≥40%.

Retention criteria: Acknowledging high retention rates can limit progression of research trials, it was decided that ≥30% of participants completing the project either through data collection at 8 weeks or patient death was acceptable.

Inclusion criteria: ≥18 years old, life-limiting (palliative) oncological diagnosis, ability to communicate in English or Welsh, and capacity to consent.

Exclusion criteria: estimated prognosis <1 month, allergy to silicone (wristband material).

Eligible patients were provided with a patient information sheet and given time to ask questions. Those who agreed to participate were consented, enrolled and issued an individual, orange QR-code wristband. Using an information guide (supplemental file 1) created based on a study with paramedics (6), the team uploaded the time-critical patient information onto the platform with input from the patient.

Results

From the 18th of March to the 6th of May 2025, 37 patients were approached and 28 enrolled reaching 70% recruitment target. The study had 100% retention. The key results of the feasibility study can be seen in supplemental figure 1.

75% (n=21) reported wearing the wristband "full time", surpassing the adherence criteria of 40%. 14.2% (n=4) participants reported wearing it only when leaving the house or going to a healthcare setting and 10.7% (n=3) reported that they did not wear the wristband.

All three essential criteria were met and therefore the acceptability of the QR-code wristband has been successfully demonstrated within this feasibility study.

We identified that participants enrolled earlier in the recruitment process were not surviving the 8-week period. This led the project team to change where they recruited patients, moving away from more unwell inpatients to the outpatients and ambulatory care settings.

Anecdotal feedback from patients who declined to participate suggested a more neutral colour would be more acceptable.

Adverse events - Two participants experienced a sweat rash from the silicone wristband, neither had a documented allergy. Replacement fabric wristbands were issued which resolved the problem.

During the 8-week period individual patient wristband websites were accessed 28 times. Of these 32% (n=9) were associated with an unscheduled care event or healthcare review. One participant recalled an on-scene paramedic using their wristband to view current medications; they felt this prevented an unwanted hospital admission.

Unexpected outcomes

Advance Care Planning (ACP) during wristband activation. ACP conversations, including acceptability of different treatments and care settings, were often facilitated. One participant requested a "do not attempt cardiopulmonary resuscitation" (DNACPR) form during wristband activation conversation.

Increased patient confidence; this theme emerged from formal patient feedback with one participant stating: *"it gives me confidence to go out on my own"* (*Velindre014)*, and another: *"it's given me lots of confidence because sometimes I struggle to speak and to communicate so having this is amazing" (Velindre020)*.

Wristband return after a participant death. The project team approached patient's next-of-kin to pass on condolences and explain the process of deactivating the wristband. Those approached felt comfortable to provide feedback on the project and wanted to return the wristband. A

returns process was developed allowing the domain and metal QR-tag to be re-used, contributing to the sustainability of the project both environmentally and financially.

Discussion/ Conclusion

The acceptability and feasibility of QR-code wristbands to palliative oncology patients to facilitate critical information sharing to paramedics and other unscheduled care providers was well demonstrated within this project. The possible role of the QR-code wristbands as a tool to facilitate ACP discussions alongside its intended role is a promising secondary outcome of this technology.

Research is suggested to assess the impact of this technology on decision making in unscheduled care, patient safety and quality of life, as well as the potential benefits for other patient populations either geographically or in other healthcare specialties.

Funding statement

The feasibility study has been funded through Velindre Charitable Funds, Velindre Cancer Charity and Velindre University NHS Trust.

Provenance and peer review

Not commissioned; internally peer reviewed.

Ethics

After review by the stakeholders listed, it was decided no ethical approvals were required. Patient representation for the project was sought through the local patient engagement group, and the project was approved by the Caldicott guardian and information governance team.

Acknowledgement

None

References

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