



## LESSONS LEARNT FROM THE DEPLOYMENT OF AN AI-ENABLED PERIPHERAL OEDEMA MONITOR IN THE COMMUNITY AND ITS USE TO INFORM THERAPY CHANGES

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### **Background:**

Over the last 2 years, face-to-face primary care appointments have reduced in frequency. This has been particularly challenging for elderly heart failure patients who often have many co-morbidities. Some of these patients are unaware of the changes in their symptoms, such as weight gain, breathlessness, or foot swelling.

### **Objectives:**

We review the learnings from this telemonitoring device deployment in patients' homes.

### **Methods:**

122 patients were provided with connected weighing scales and the AI-device (+ 4G internet dongle if required) from 11 GP surgeries in the UK. Most patients lived in areas with high deprivation levels. We looked at the acceptability and usage of the devices as well as the burden of alerts on the GP teams. The evaluation was initially set for 6 months, but most patients choose to keep the devices for longer.

### **Results:**

Despite the devices being offered to high-risk patients (due to complex medical presentation or to a history of non-adherence) data were available for most patients:

Weighing scale usage (at least once = 60.7%; at least 16days/mth = 5.7%)

AI-device usage (at least once = 100%; at least 16days/mth = 71.3%)

This suggests that the passive and automated nature of the AI-device may provide a solution to improve the data capture for patients who may not otherwise engage with medical technology.

Patient acceptability was very good with very few patients deciding not to accept the devices in their homes. 40% of patients answered usability questionnaires:



- 92% would be likely or very likely to recommend the device to a friend if they had heart failure.

During the study period, we recorded the number of alerts raised either by telling the patients to contact their GP or by contacting the GP directly. This did not result in a significant burden from the medical team responding to alerts and the vast majority of these were either true heart failure-related alerts or alerts due to other conditions which also required medical attention (COPD exacerbation, Covid19 infection, lymphoedema, ...). General feedback from GP groups was particularly positive for those who had a dozen or more patients evaluating the device.

**Conclusion:**

Despite the chosen patient group (representative of the high-risk heart failure population in the area), data acquisition was excellent, allowing clinicians to get an overview of the patient's health status remotely.

It is important to note that our study was not an RCT, so we cannot be confident that the AI-device helped prevent admissions or helped optimized medication for patients, however anecdotally, the medical teams felt that medical issues were picked up sooner and that the device did not create a significant increase in workload.

More work will be needed before this can be recommended more widely within the NHS.

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