Hospital at home teams care for people who are unwell in their own homes rather than in hospital. Remote monitoring of their heart rate, oxygen levels and other vital signs is recommended, so that healthcare staff based in the hospital know how the patient is doing at home. However, evidence to support wider use of these technologies is limited.

We tested the extent to which monitoring was possible and reliable using a new wearable chest patch while the patients were in their own homes (remote monitoring). We included in our study adults receiving Hospital at Home care with acute illnesses, such as chest infections. Patients wore a chest patch which automatically measured their heart rate (pulse) and breathing rate for up to 7 days. Patients or their carers were also asked to use additional equipment to check their oxygen levels, blood pressure and temperature several times a day.

26 patients completed the study. Almost all (89%) of patients had a heart rate recorded every 4-hours during the study. Most (75%) had their breathing rate recorded every 4-hours. Oxygen levels, blood pressure and temperature were recorded by just over half (51-58%) of the patients each day. These results were available to their hospital-based healthcare staff.

The results of this study show that it is possible to reliably monitor people at home using this wearable chest patch and for healthcare staff to be able to see the results in the hospital. Monitoring levels were higher for heart rate and breathing rates which came automatically from the chest patch. Monitoring levels were lower when the patients had to use additional equipment to check and record the readings (such as their blood pressure) themselves. Next, we need to learn more about which of these acutely ill patients would benefit most from this remote home monitoring and how to use the continuously-available data to quickly change treatments when needed.