

WIRELESS BODY AREA NETWORKS

Vital signs monitoring goes into the cloud

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Wearable sensors could be used to monitor a patient's vital signs without the need for time-consuming manual measurements. However, the sensors, which can be based on patches or wearable textiles, are typically only able to monitor a few vital signs at a time, are bulky and power consuming, or lack wireless capabilities. Chun Huat Heng and colleagues have now developed a compact, end-to-end system that can monitor five vital signs — heart rate, respiration rate, temperature, oxygen saturation and systolic blood pressure — and display them in real time.

To build the monitoring system, the researchers — who are based at the National University of Singapore, University College Dublin and Shanghai Jiao Tong University — integrated wearable biosensors with

low-power Bluetooth modules, cloud infrastructure and display apps. The data from the biosensors are first sent to a mobile device or laptop via Bluetooth and then uploaded to the cloud for analysis. The measurements can then ultimately be displayed on the apps.

During clinical trials, the 5 vital signs of 14 patients were monitored. Compared with a commercial medical-grade device, the monitoring system could measure the vital signs with improved precision. The system was also shown to be capable of providing vital-sign monitoring for up to 24 hours.

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