



Battery-powered patches (blue) transmit many measurements, such as an infant's vital signs and movements, without the need for a tangle of cables. Credit: Northwestern University

MEDICAL RESEARCH · 19 MARCH 2020

A wireless wearable patch records a fragile baby's every cry

Supple, unobtrusive sensors can provide valuable data on a newborn's health.

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Soft, flexible electronic patches might one day replace the wires and monitors attached to critically ill premature babies.

Researchers led by John Rogers at Northwestern University in Evanston, Illinois, had previously developed gel-covered wireless sensors that monitor infants' vital signs, such as heart rate, skin temperature and respiration rate. The sensors – which can be placed on the chest, foot or wrist – send data via wireless connections to a

smartphone or tablet. The inconspicuous sensors allow parents to have more skin-to-skin contact with their newborns.

The researchers upgraded the sensors to include miniature batteries and long-range wireless links to track babies' movements, capture their heart sounds and record their cries to determine whether they're under stress or in pain. Pilot studies show that the devices accurately record these additional details.

The authors suggest their devices could be particularly valuable in low-resource regions where blackouts are common. The team has started testing the sensors in hospitals in 17 countries across 5 continents, with first deployments in Zambia and Kenya.

***Nat. Med.* (2020)**

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