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Impact Inclusion Innovation Investment

Analogue to digital

Enabling safe national adoption of remote oxygen monitoring for COVID-19 patients at home

ARC Wessex

The challenge
During the COVID-19 pandemic, hospitals faced severe capacity pressures while many patients were managed at home, but clinicians lacked robust evidence that oxygen saturation measured outside hospital could reliably detect deterioration and support safe escalation. This uncertainty created risks for patients and limited safe large-scale remote monitoring.

The approach
To validate home oxygen saturation as a marker of deterioration, rapid research with NHS partners was conducted by ARC Wessex. This informed national guidance and enabled rollout of COVID Oximetry@home (CO@h) across England. In parallel, work was progressed with Wessex Academic Health Science Network to outline the digital and data architecture necessary to safely scale remote monitoring, escalation and evaluation at pace.

The outcomes and impact
Wessex-based evaluation showed lower mortality and shorter hospital stays among patients monitored at home. Independent national evaluations found no evidence of harm at scale and highlighted variation linked to enrolment, data quality and implementation.

Together, this evidence informed the evolution of CO@h into NHS@Home service models, improvements in patient safety and system-level adoption of remote monitoring at scale.

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