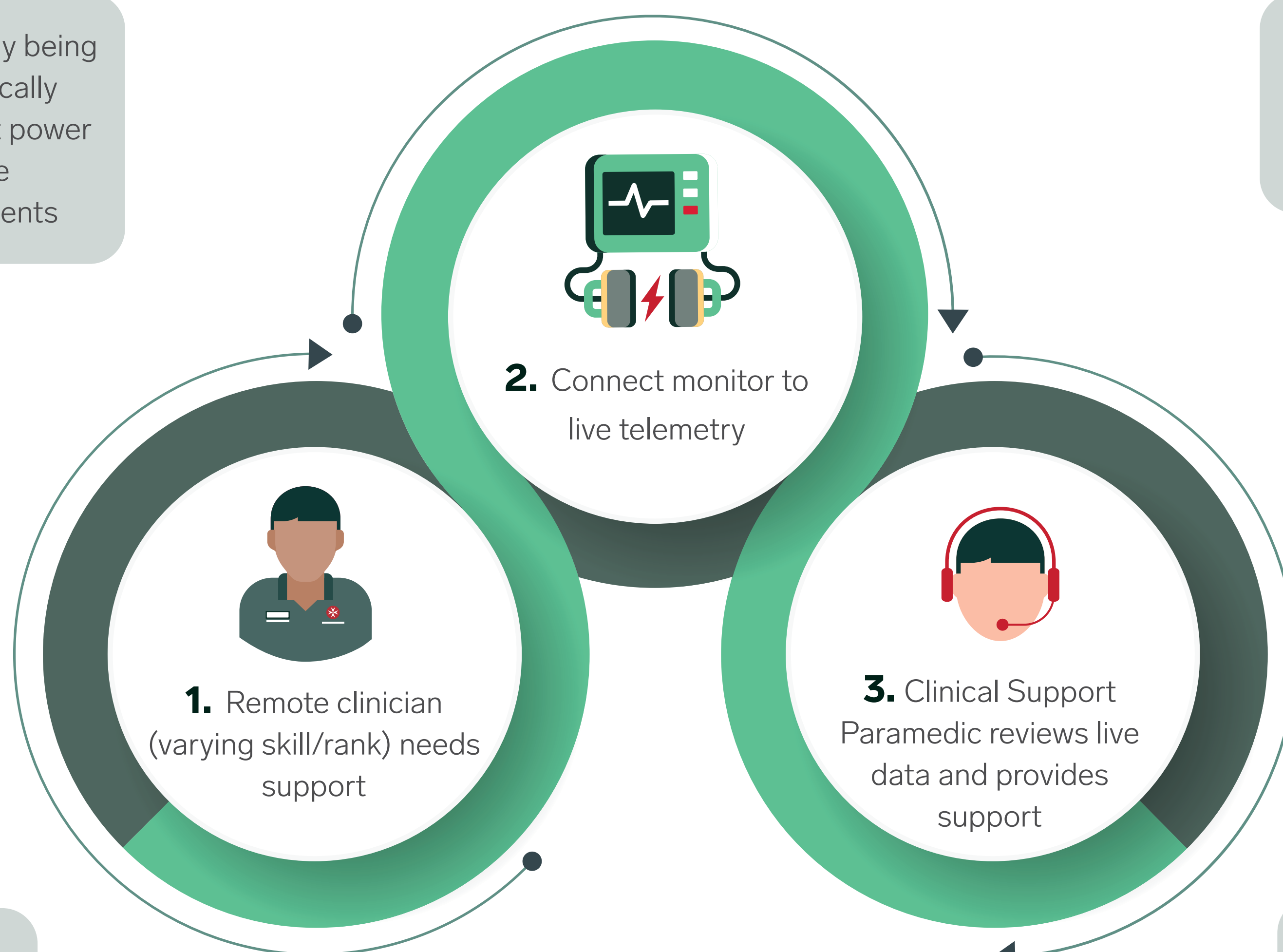


Using live telemetry data to enhance remote clinical support



Volunteer monitors currently being reprogrammed to automatically connect to live telemetry at power on, reducing time to provide support in time-critical patients

All 4G capable, a mix of Telstra and Vodafone (100% Telstra in regional and remote, mix in metropolitan Perth)



On average 13 connections a day between April and June 2024

670 monitors, all with telemetry enabled. 237 (35%) at volunteer only locations

Background:

Providing remote support to field clinicians, particularly within a volunteer workforce, poses significant challenges. The Clinical Support Paramedic (CSP) stationed in the State Operations Centre (SOC) lacks physical visibility over the patient and must rely solely on vital signs delivered by the field clinician over the phone. Various communication challenges can hinder the accuracy and efficiency of clinical decision-making, potentially contributing to adverse events.

Method:

The implementation of mobile data capable defibrillator/monitors within St John WA's (SJWA) ambulance service enables the live streaming of telemetry data directly to the CSP in the SOC. This functionality allows for real-time visualisation of vital signs, including ECG (single lead and any 12-leads performed), blood pressure, pulse oximetry plethysmography, end-tidal CO2 monitoring, and respiratory rate. Moreover, the device can transmit a live view of parameters while in defibrillator mode, enabling remote support and providing a virtual "presence" of CSPs at out-of-hospital cardiac arrest scenes, in regional Western Australia. This capability enhances decision-making processes and optimises treatment strategies.

Results:

Feedback from volunteer and early career clinicians, as well as CSPs has been overwhelmingly positive. The availability and richness of additional telemetry data points, coupled with visualisations of patient responses to treatment in real-time enhances the efficacy of the telephone support model.

Conclusion:

Given the positive feedback and integration of live telemetry, SJWA's next endeavour involves sourcing a video conferencing platform which integrates rich telemetry data with live video feeds from the scene. This advancement will significantly enhance remote clinical support capabilities. Using the same live telemetry features SJWA are also investigating auto-population of vital signs into the electronic patient care record, which opens up opportunities around automatic calculation of early warning scores and additional alerting possibilities both to in-field clinicians and remote paramedics of a deteriorating patient.



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