



Issue: ECG Transmission Procedures

Raised by: Julie Barnes, Project Officer (NT PCD Clinical Reference Group)

Background: As part of follow up arising from the NT Cardiac Services Review, Remote Health Branch (RHB) was invited to consider streamlining the process of referrals to Cardiologists in tertiary centres. Out of this, Best Practice Group was asked to consider any means of improving the image quality and speed of transmission for Electrocardiograph (ECG) reports.

Discussion: As in all clinical cases requiring consultation with a medical officer, health centre staff consult the DMO on-call regarding the clinical management plan. For acute cardiac events, an ECG is usually faxed for review to the DMO, who may also forward to a consultant if required.

Conventional facsimile is the usual means of ECG transmission, but often results in a poor image for review. Options to improve this (dependent on equipment capabilities) include:

1. the trace may faxed via modem direct from ECG machine to a fax machine
2. print a paper copy, scan and then email as attachment to the medical officer
3. print, scan and add as attachment to the PCIS record

Option 1 is possible where an ECG machine has the capability. The Trim2 ECG machine (the ECG type found in most Remote health centres) is capable of this function where a modem is in situ. Trials of this type of transmission have proven that it is not possible to simplify the process to the point where it could easily be used by staff managing an acute cardiac event. This is particularly the case where fax numbers may differ for different consultations. However, interested staff could consider using this mechanism where they are technically competent. An [instruction sheet](#) has been developed to guide those staff. (Note that a recent audit revealed most RHB units are missing the modem, and interested staff would need to acquire a modem if necessary.)

A variation on this option is to configure the ECG to fax to an e-fax (email) account for the DMO on-call, however there are independent workflow issues to be investigated in this regard.

Option 2 is of value but may add processing time in an urgent situation. Also health centres not using PCIS do not usually possess scanners.

Option 3 should be utilised by all PCIS sites regardless, to ensure completeness of the medical record. In relation to urgent consultations with the DMO, urgency may dictate that faxing is the preferred immediate option, however where scanning and attaching to PCIS can be achieved in a timely manner this will facilitate access to a better quality ECG trace, and once attached to PCIS is effectively available to the DMO immediately.

The ability to upload ECG tracings directly into PCIS is being explored as a future improvement.

Consultation: Trevor Riessen (Medical Equipment Management); RHB Health Centres that possess Pagewriter Trim II ECG's

References: Pagewriter Trim Cardiograph Instructions for Use (pp 2-34 to 2-49; 4-11 to 4-14).

Outcome: Differing situations in remote health centres preclude establishing one preferred standardised mechanism for transmission of ECG.

Health centre staff should consider the above options and see if any above option may be employed in their health centre to improve quality of ECG transmission.

Direct faxing of ECGs from ECG equipment (via modem) is considered the best transmission option for obtaining a quality tracing. Where staff are interested the relevant [instruction sheet](#) may be viewed and any queries discussed with the regional PPN.