

# Researching the effectiveness of point-of-care testing on the Abbott i-STAT in the Northern Territory

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## Introduction

In 2008 the Northern Territory Department of Health and Families partnered with the Flinders University Community Point-of-Care Services Unit to introduce point-of-care testing (PoCT) on the i-STAT device (Abbott Point of Care, Australia) for the provision of selected pathology services in 33 remote health centres. The i-STAT provided a practical option for the provision of pathology services in remote communities, as tests are conducted on-site on a small blood sample, results for tests such as electrolytes, urea, creatinine, troponin I, blood gases and lactate, INR and haemoglobin are available in 10 minutes or less, and clinical management can be initiated 'on the spot'.

## Aim

The aim of the program was to improve access to pathology services in selected remote health centres from the Northern Territory through the implementation of a quality assured PoCT service.

## Methods

Remote area nurses and Aboriginal health workers were trained and received competency certification as qualified PoCT operators through a program of workshops and on-site training. A quality management program was implemented to routinely monitor the analytical quality of the i-STAT in field use, and telephone and newsletter support services established. A research plan analysed the operational effectiveness, analytical quality, clinical effectiveness and satisfaction levels with the PoCT service in the first year of the service.

## Results

164 health professional staff were trained as qualified PoCT operators. 2290 i-STAT tests were performed. Patient testing on the i-STAT was highest for the INR (averaging 70 tests per month). Analytical quality for PoCT consistently met profession-based analytical goals and/or state-of-the-art laboratory performance for most tests, with the percentage of acceptable quality results for all tests on the i-STAT averaging 97%. Clinical case studies sourced from the i-STAT central data station (which electronically captured de-identified patient and quality data from all remote services) confirmed the clinical effectiveness of PoCT for acute and chronic conditions. Community satisfaction with PoCT was validated using qualitative surveys of device operators (n=35). Greater than 80% of respondents believed PoCT was more convenient than the laboratory and assisted in the stabilisation of acutely ill patients.

## Conclusions

The Northern Territory PoCT Program has proven operationally effective, analytically sound, clinically and culturally effective, and well-received by health professional staff. The main challenges for the program are securing a significant funding base to sustain the program and maintaining standards of training and analytical quality in the face of high staff turnover.