

P447

## Awareness and Attitude to Point of Care Creatinine Testing in a Tertiary Renal Unit

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### Background:

Point of care (POC) testing with finger-prick blood self-monitoring has transformed care for millions of individuals (e.g. glucose). Chronic kidney disease (CKD) care requires frequent monitoring of kidney function; however sample processing prolongs result availability, which may lead to worse outcomes due to treatment delay. In other chronic diseases, self-monitoring is associated with feelings of security and satisfaction. POC creatinine testing (POC-Cr) would allow results to be available immediately for patients and healthcare professionals to guide management decisions but there is limited understanding of potential roles in clinical care.

### Aim:

To determine healthcare professionals' awareness and acceptability of POC-Cr in a renal unit

### Methods:

A questionnaire study of 30 healthcare professionals was undertaken to explore awareness and acceptability of POC-Cr testing. Likert scales were used to quantify responses and free text was analysed for common themes.

### Results:

Respondents included 13 (43%) doctors, 13 (43%) nurses, 3 (10%) AHP and one (3%) midwife, of which 70% were female. Overall, less than half of the respondents (43%) were aware of POC-Cr testing however POC testing were being performed in clinical areas of respondents' work (57%).

Many healthcare professionals (43%) reported that they requested more than 20 creatinine concentration assays per week, and 40% of respondents considered that at least half of their patients would benefit from having immediate results.

Responses to questions regarding important aspects of clinical care which could be improved by POC-Cr are shown in Figure 1. Ten percent of respondents felt that POC-Cr testing would have 'considerable' or 'extremely negative' impact on work load for healthcare professionals. Seven percent were concerned about discomfort for patients. Thirty-three percent felt that POC-Cr testing would have 'considerable' or 'extremely negative' impact for patients to have finger-prick test in addition to other blood tests. Free text themes of concern included accuracy of testing and importance of protocols to respond to patients with abnormal readings.

Simultaneous POC testing to include potassium (93% of respondents), haemoglobin (80%), bicarbonate (47%) and urea (40%) were found to be most desirable additional assays.

Respondents' opinions on usefulness of POC-Cr in different settings are shown in Figure 2. Acute kidney injury (AKI) (33%) and transplant patients (20%) were considered to be the conditions which would benefit the most from POC-Cr.

The ways in which respondents considered that patients could benefit from POC at home or in the community are shown in Figure 3. The respondents considered the biggest disadvantages of home or community POC-Cr testing to be increased anxiety with abnormal readings (43% - 'considerably' or 'extremely disadvantageous') and increased frequency of testing (50% - 'considerably' or 'extremely disadvantageous')

#### Discussion:

Awareness of availability of POC-Cr by healthcare professionals was limited. Future roles of POC-CR in AKI and transplant patients were identified. Potential benefits included detection of early changes in kidney function, expediting decision-making, informing timing of repeat testing and reduction of clinic visits with minimal negative impact on healthcare professionals' workload or discomfort to patients. Further exploration in clinical practice is needed to confirm utility of POC-Cr testing.