# Diabetes Care Analysers (DCA) PHC Remote Guideline

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| **Target Audience** | All Clinical Employees |
| **Jurisdiction**<br>**Jurisdiction Exclusions** | Primary Health Care Remote CAHS; Primary Health Care Remote TEHS<br>N/A |
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| **Approval Authority** | Chairs<br>Clinical Governance Committee PHC CAHS; Primary Health Care Safety and Quality Committee TEHS |
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## Purpose

To provide Primary Health Care remote staff with a guideline on the management, including checks, maintenance and supply of consumables, of the DCA Vantage Analyser used in remote health centres.

## Guideline

### 1. General Information

The DCA Vantage Analyser (DCA) is a portable medical device used for Point-of-Care Testing (POCT) of Haemoglobin A1c (HbA1c) in whole blood in 6 minutes, and urine albumin:creatinine ratio (ACR) in 7 minutes.

POCT provides many advantages including prompt pathology results which aid in determining appropriate clinical management of the client and hence better outcomes. Results obtained using the DCA compare favourably in accuracy to formal laboratory results when equipment is well-maintained and quality is assured.

Whilst the DCA is relatively easy to operate, there are significant dangers to this valuable equipment if misused. There is a need to appreciate the quality of testing and supply issues surrounding the use of the analysers. This dictates that staff must be appropriately trained and certified as a Qualified POCT Operator, prior to using the equipment. Staff operating Primary Health Care (PHC) Branch DCAs must be recognised as qualified operators by Remote PHC; use by non-qualified staff is not authorised.

The DCA is not standard equipment in remote health centres. When selecting sites for the placement of equipment consideration has been given to access to general laboratory services, transportation difficulties and the health service requirements of the community.

*Note: Hyperlinks to QAAMS documents are password protected. Staff requiring DCA training will be provided with access details to the QAAMS website on application.*

# 2. Procedure

## 2.1 When to Perform a Test

*Use of the DCA is restricted to Qualified Point-of-Care Testing Operators only.*

To ensure correct utilisation of the analyser, testing should only be performed when it has been requested by a Medical Practitioner, recall via a Chronic Disease Care Plan or where stipulated in the CARPA Standard Treatment Manual (STM). The following clinical criterion provides a guide to these circumstances:

- **HbA1c** - in the management of clients with established diabetes. A maximum of four tests per year. Secondly for the diagnosis of diabetes in high risk clients.
- **ACR** – in the management of clients with established diabetes or for the early detection of renal disease. A maximum of four tests per year.

## 2.2 How to Perform a Test

Observe Standard Precautions when performing a test.

### 2.2.1 HbA1c

Capillary whole blood is the preferred sample type although a venous whole blood sample collected in a lithium heparin or EDTA blood tube can be used. HbA1c can be performed on a random blood sample, any time during the day. To perform HbA1c POCT, refer to the Client Testing for HbA1c poster for a step-by-step guide *(Note: participant log in is required)*.

### 2.2.2 Urine ACR

A first morning urine sample collected into a sterile plain urine container is the preferred sample type. If a first morning sample is unavailable, a random spot urine sample may be tested, although the result should be interpreted with caution as a false positive (falsely elevated) urine ACR may occur due to minor protein loss through exercise and prolonged standing for example. The urine sample should be first tested by 'dipstick' to determine whether the sample is suitable for ACR analysis. The presence of large amounts of protein, blood, leucocytes or nitrites may cause an incorrect ACR result to be reported. See: Urine Check prior to Testing on the DCA poster. To perform a Urine ACR POCT, refer to the Client Testing for Urine ACR poster for a step-by-step guide *(Note: participant log in is required)*.

## 2.3 Managing Test Results

All client POCT results should be recorded into the clients individual Electronic Health Record (EHR) under the appropriate service item / clinical item to allow results to be monitored across time.

## 2.4 Point-of-Care Testing Training

Training videos are available via the Participant Only section of QAAMS website, on the Training Videos webpage *(Note: participant log in is required)*. This is the preferred method for DCA training.

DCA Vantage training and competency assessment is provided through the QAAMS online training mechanism. A monthly DCA training reminder e-mail will be distributed to all health centres with a DCA Analyser. This competency contributes towards Continuing Professional Development (CPD) and is equivalent to 4 hours/points. This is documented on the Certificate of Competency received on successful completion of the training.

It is important to note that when using an NTG computer staff will need to be logged into the NTG Network using their **personal ePASS / LAN User ID** to access the online QAAMS Training Videos *(Note: participant log in is required)*.

Other options for DCA training may also be negotiated where online training may not be possible. See Section 4.4.2 for the range of other training options.

### 2.4.1 DCA Online Training Process

a. Contact QAAMS on **08 8201 7555** to obtain a unique **QAAMS Operator ID** and temporary password. This provides access to the **PARTICIPANTS ONLY** section of the **QAAMS Website** with the training resources required to study for the DCA Vantage Competency.

   *Note: The **DCA Vantage Operator ID** (and assigned password) is required to logon to the QAAMS website. A prompt to change the password will appear when first log on is made.*

b. The DCA Vantage **Written Competency Assessments** will be assigned to the trainee's nominated personal e-mail address and will contain instructions and a link to the online assessments.

   *Note: Written assessments consists of 10 multiple choice questions for each (HbA1c and urine ACR) and are to be completed within 4 weeks.*

c. Complete the **Written Competency Assessment** by clicking onto the link in the email and logging in using the assigned **Operator ID and password**

   *Note: the assessment does not have to be completed in one sitting. Answers will be stored and the trainee has up to four weeks to complete the assessment.*

d. Successful completion of the **Written Competency Assessment** will generate an automated response to the same address with instructions on how to complete the practical component of competency testing.

e. Once the practical component of training is complete the trainee will receive a **certificate of competency** by e-mail, for both HbA1c and urine ACR.

### 2.4.2 DCA Training – Other Options

The range of alternative modes for DCA training that may be negotiated includes:

- QAAMS Annual Workshop
- Regional training workshops conducted by QAAMS Team members
- Teleconference-based training provided by QAAMS team members or PPN's
- On-site training in health centres provided by PPN's

On completion of training, the online written assessment and practical component must be completed to achieve a Certificate of Competency.

### 2.4.3 Equipment Required for DCA Training

It is suggested that the trainee begin the training with the following equipment present for the duration and completion of the training session:

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| DCA Vantage analyser plugged into power | HbA1c testing cartridges (box) |
| Optical Test Cartridge | ACR testing cartridges (box) |
| Box of **Q**uality **C**ontrols (**QC**s) – *for HbA1c & ACR* | Gloves |
| Box of **Q**uality **A**ssurance (**QA**) – *for HbA1c & ACR* | Scissors |

### 2.4.4 Qualified Point-of-Care Testing Operators

As the use of POCT analysers is restricted to Qualified POCT Operators it is recommended that all clinical staff become Qualified POCT Operators.

A Qualified POCT Operator is someone who has undergone training and competency certification through QAAMS. To maintain Qualified POCT Operator status, competency assessment through participation of retraining and recertification is required every two years.

## 2.5 Quality Management

An essential part of conducting routine POCT is the regular monitoring or 'checking' of the quality of the analyser. Quality checks are integral components of the quality management system and include:

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| Quality Control (QC) Checks, for<br>~ HbA1c and uACR | Quality Assurance (QA) Checks, for<br>~ HbA1c and uACR | Optical Test |

Performing these quality checks is critical; without these checks there can be no guarantee that patient results generated by POCT devices are valid or accurate. Operators who regularly check the accuracy and precision of the DCA analyser are also maintaining a high level of competency for performing Quality Checks.

### 2.5.1 Quality Control (QC) Check

An artificial sample (reconstituted, with water, 'dried' blood or urine sample) is provided to perform the Internal QC. This sample has an assigned or 'target' value for each POCT being measured and limits for acceptable performance around that target are set. If QC results are outside of the acceptable limits, then using the DCA for client tests should be suspended until the reason for poor performance has been rectified. See Quality Control Action Sheets *(Note: participant log in is required)*.

QC checks are to be conducted monthly in the first fortnight of the month.

**Quality Control Check for HbA1c**

HbA1c QC checks are to be conducted using two quality control materials (normal and abnormal), as indicated on the HbA1c Quality Control Result Sheet. Instructions on how to prepare the samples and perform the QC check are provided in HbA1c Quality Checks Using Siemens Quality Control Samples *(Note: participant log in is required to access resources)*.

**Quality Control Check for Urine ACR**

Urine ACR QC checks are to be conducted using two quality control materials (low and high), as indicated on the Urine ACR Quality Control Result Sheet. Instructions on how to prepare the samples and perform the QC check are provided in Urine ACR Quality Checks Using Siemens Quality Control Samples *(Note: participant log in is required to access resources)*.

### 2.5.2 Quality Assurance (QA) Check

The QA component of QAAMS is provided by the Royal College of Pathologists of Australasia (RCPA) Quality Assurance Programs Pty Ltd. and has been specifically designed for the QAAMS Program. The QA samples are in dried form and are made up with water. Each sample has a 'target value' (which is set by the international reference method for HbA1c) and an 'Acceptable Limit for good Performance (ALP)' set by the RCPA. The level of HbA1c and Urine ACR in these samples covers the range of values likely to be seen in clients with diabetes and early renal disease.

QA checks are to be conducted monthly in the second fortnight of the month.

**Quality Assurance Check for HbA1c**

HbA1c QA checks are to be conducted by testing the two QA samples specifically numbered and dated for that month according to the Testing Calendar provided by the QAAMS Management team. Instructions on how to prepare the samples and perform the QA check are provided in HbA1c Quality Checks Using Quality Assurance Samples *(Note: participant log in is required)*.

**Quality Assurance Check for Urine ACR**

Urine ACR QA checks are to be conducted by testing the two QA samples specifically numbered and dated for that month according to the Testing Calendar provided by the QAAMS Management team. Instructions on how to prepare the samples and perform the QA check are provided in Urine ACR Quality Checks Using Quality Assurance Samples *(Note: participant log in is required)*.

### 2.5.4 Optical Check

The optical test should be performed monthly and as required. For instructions on how to perform an optical test refer to the QAAMS Folder, or download the Vantage - Optical Test Procedure form (with instructions) from the QAAMS website – download the key paperwork webpage *(Note: participant log in is required)*.

## 2.6 Technical and Service Support Contacts

A telephone support service is available Monday to Friday 8am to 5 pm CST. Contact details are provided on the Key Contacts for Support Services (participant log in required).

## 2.7 Medicare Claiming

Membership to the QAAMS Program allows HbA1c and Urine ACR, performed with the DCA Vantage analyser to attract specific Medicare benefits. Medicare benefit claiming can be made under the Medical Practitioner's Provider Number by a RAN or AHW. The Medical Practitioner must first register with Medicare for a specialty code specific to the QAAMS program. See Medicare Overview for more information.

Once the Medical Practitioner is registered with Medicare, claiming can be made under Medicare Item numbers; for HbA1c – 73840 (for management) or 73839 (for diagnosis) and uACR – 73844, by Qualified POCT Operators. In addition, if the patient is the holder of a Commonwealth concession card the incentive item number 74991 (rural and remote) or 74990 (urban) may also be claimed. See: Medicare Overview.

Health centres who do not comply with the requirements for QC and /or QA will be suspended from the QAAMs Program and be unable to claim medicare benefits for client tests performed on the DCA.

## 2.8 Consumables

Stock levels should be kept at a minimum to avoid waste. When receiving new stock it should be placed behind existing / older stock so that stock at the front of the refrigerator shelf is the oldest stock and therefore used first. When it is identified that stock may not be used prior to the expiry date notify the PPN, it may be appropriate to move stock to another location.

### 2.8.1 Ordering

Cartridges, air filters and QC solutions can be ordered by using the relevant Point-of-Care Consumable Order Form and e-mailing / faxing it to the CA or TE PPN.

QA solutions are distributed to health centres by the RCPA at the end of each year in readiness for commencement of the next calendar year.

### 2.8.2 Storage

**Cartridges:** Cartridges are to be kept refrigerated at 2 - 8°C. Where DCA consumables are unable to be stored in a separate refrigerator with cold chain monitoring, approval has been provided to store cartridges in the vaccination fridge at the health centre. If inadequate refrigeration or a break in the cold chain should occur the cartridges are to be stored at room temperature (18-30°C) and are viable for use for a period of three (3) months after which they must be discarded.

During the transportation of cartridges they are to be handled in the same way as vaccines i.e. packed in an esky with ice bricks.

**Quality Control Samples:** QC samples are stored in the refrigerator in the same manner as vaccines. Once mixed the QC sample can be stored in the vaccine refrigerator for three months. Samples older than three months must be discarded.

**Quality Assurance Samples:** QA samples are stored in the refrigerator in the same manner as vaccines. Once a QA sample has been reconstituted, and testing is complete, the used sample must be discarded.

## 2.9 Documentation

### 2.9.1 POCT Results

All client POCT results should be recorded into the clients individual EHR under the appropriate service item / clinical item to allow results to be monitored across time.

### 2.9.2 Quality Management

Recording of all QC and QA results utilising the QAAMS DCA Vantage Quality Control Result Sheets and QAAMS/RCPA Quality Assurance Results Sheets respectively is compulsory. Results are to be submitted online via the QAAMS website *(Note: participant log in is required for access to resources and online submissions).*

## 2.10 Maintenance and Cleaning

The DCA can be wiped down with a slightly damp, soft cloth, using mild general purpose detergent / warm water. Excessive fluids are to be avoided, which may potentially damage the analyser. Do not use alcohol based wipes on the screen of the DCA Vantage.

The DCA Vantage dust filter should be checked monthly or as required. Fuses require replacement as required. The DCA Vantage Analyser will not operate with a blown fuse. Should the DCA Vantage fail to switch on the fuse should be replaced.

## Document Quality Assurance

| | Method | Responsibility |
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| **Implementation** | Document will be accessible via the Policy Guidelines Centre and Remote Health Atlas | Health Policy Guidelines Program |
| **Review** | Document is to be reviewed within three years, or as changes in practice occur | Atlas Development Officer, Primary Health Care CAHS |
| **Evaluation** | Evaluation will be ongoing and informal, based on feedback. | Atlas Development Officer, Primary Health Care CAHS |

## Key Associated Documents

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| **Forms** | QAAMS website – see key paperwork webpage *(Note: participant log in is required)*:<br>DCA Quality Control Result Sheets<br>DCA Quality Assurance Result Sheets<br>Point-of-Care Consumables Order (Central Australia) PHC Remote Form<br>Point-of-Care Consumables Order (Top End) PHC Remote Form |
| **Key Legislation, By-Laws, Standards, Delegations, Aligned & Supporting Documents** | Medicare Overview PHC Remote Guideline<br>Point of Care Key Contacts for Support Services (participant log in required)<br>QAAMS website (home page) |

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| | HbA1c Converter *(electronic calculator available on 'resources' webpage)*<br>*Note: Participant log in is required to access the following QAAMS webpages:*<br>QAAMS Training Resources<br>Training Videos *(Note: individual NTG login required to access training videos)*<br>QAAMS Point-of-Care Training Manual for DCA Vantage<br>HbA1c Units Conversion Chart *(scroll to bottom of webpage)*<br>QAAMS Key Paperwork |
| **References** | As above |

## Definitions

| Preferred Term | Description |
|---|---|
| **ICPOCT: Flinders University International Centre for Point-of-Care Testing:** | A specialist POCT provider, with experience in the delivery of POCT services to rural and remote health services around Australia and Internationally. |
| **QAAMS Program:** | Quality Assurance in Aboriginal and Torres Strait Islander Medical Services Program is managed by the ICPOCT on behalf of the Australian Government. |
| **Qualified POCT Operator:** | Clinical staff who have successfully completed training provided online, by the ICPOCT unit or training by POCT Resource Staff and the ICPOCT, who hold a current POCT Certificate. For information about POCT Training see Section 2.4. |
| **POCT Resource Staff:** | Clinical staff who have successfully completed POC training provided by ICPOCT who have demonstrated advanced competency skills and are able to provide training support to others. POCT Resource Staff may be in support positions such as Public Health Nurse, Nursing Coordinator or Professional Practice Nurse (PPN) or 'on-site' (current Qualified i-STAT Operator working at a remote health centre). |
| **NT POCT Management Committee:** | the management committee, comprising representatives of the NT Department of Health (DoH), ICPOCT and other stakeholder groups, responsible for the overseeing the NT POCT Program for i-STAT & DCA Analysers. |

## Evidence Table

| Reference | Method | Evidence level (I-V) | Summary of recommendation from this reference |
|---|---|---|---|
| N/A | N/A | N/A | N/A |