



# PoCT Connectivity

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## PoCT Connectivity

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- More than just the transfer of results!
- Part of an integrated system that connects the whole PoCT testing team
  - Clinicians
  - Nurses
  - Scientists
- Setting of the PoCT being performed
  - Hospital
  - GP Surgery
  - Patient self-testing/Pharmacy

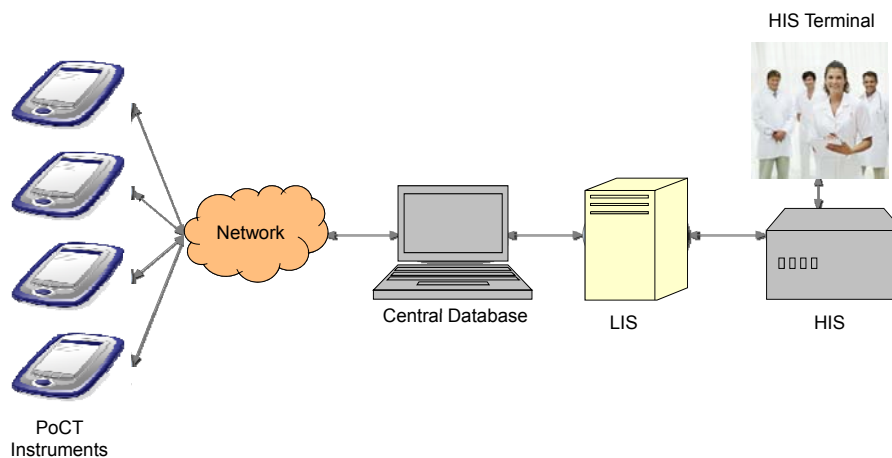
## Connectivity Industry Consortium (CIC)

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- Created in 1999 to develop a standard where any PoCT device could connect with any data management system
  - Reduce complexities and therefore costs
- Development of the connectivity standard 'POCT1-A'
  - 'POCT1-A2' – updated document

## PoCT Connectivity

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## PoCT Connectivity

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## PoCT Connectivity

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- Can be many instruments across many different sites
  - Within a hospital
  - Across different hospitals
- Connectivity helps to create a 'Virtual Lab'
  - Only use connectible PoCT instruments where possible

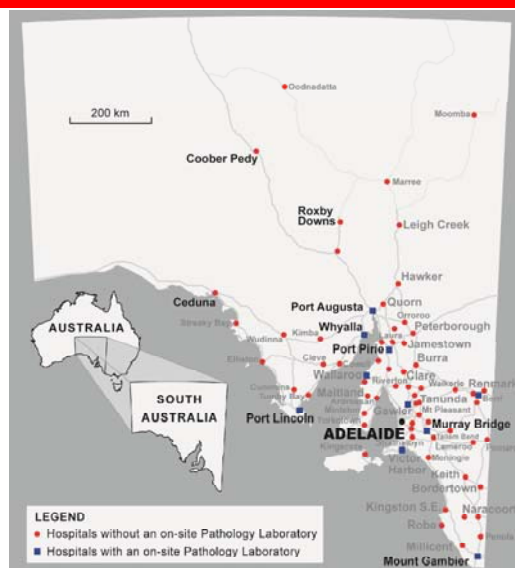
## iCCnet CHSA

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- 120 sites
- 250 instruments
- 7 different instrument types
  - Majority connected

## iCCnet CHSA

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## Data Transfer

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- Information transferred to central database from the testing site
  - Location of instrument
  - Serial number of instrument
  - Test results
  - Test type
  - Patient ID
  - Operator ID
  - Sample type
  - Strip lot information
  - Test comments
  - Error codes

## Error Codes

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- Able to track the different type of errors that sites are getting
  - Operator errors
    - i.e. applying to much blood to a test cartridge – organise retraining
  - Instrument errors
    - i.e. terminal error with instrument – organise a new instrument for the site
  - Reagent errors
    - i.e. batch of strips faulty – organise swap over
- Calculate wastage of test strips/cartridges

## Quality Control

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- Capture all QC data from multiple sites
- Compare sites
  - CV values
  - Compliance
- Organise retraining for poor performing sites
- QC/Operator lockouts

## Data Transfer

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- Information transferred from central database to the instrument
  - Date/time
  - Instrument settings
  - Software upgrades
  - Strip/control lot information
  - Operator lists

## **Current Connectivity Issues**

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- More than half of all PoCT testing performed uses qualitative strips
  - i.e. urinalysis, hCG, pH tests etc
  - No connectivity!!
- Majority of systems rely on nurses to manually 'dock' the instrument to download
  - Delay into EMR...not real-time
- Unique identifiers across different sites
- Identifying PoCT and Lab methods in reporting systems

## **Operator Training**

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- Online competencies
  - Web-based
  - Automatically link to connectivity system
  - Assign operator ID' s
  - Tailor training to specific needs
  - Ensure all PoCT operators are up to date with their competency testing
  - Alert PoCT operators when about to expire
  - Linking to CPD points for nurses

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**ICnet CHSA** Integrated Cardiovascular Clinical Network CHSA

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**My Completed Competencies**

Test Name	Completed Date	Expiry Date
Abbott i-STAT	7/10/2011	7/10/2012
Hemocue Hb	19/09/2011	19/09/2012
INR Roche CoaguChek XS Plus	6/09/2011	6/09/2012

**Available Tests**

Test Group [ALL]

Test
Abaxis piccolo xpress
Abbott i-STAT
Hemocue Hb
Hemocue WCC
INR Roche CoaguChek XS
INR Roche CoaguChek XS Plus
Roche Accu-Chek Inform II
Roche cobas h232 Troponin T

**Hemocue Hb**

1. Which drop of blood from the finger-prick should be used?

a) First drop  
 b) Second drop  
 c) Does not matter which drop

2. How much blood should be applied to the test cuvette?

a) 0.5 mL  
 b) 1.0 mL  
 c) Enough to fill the cuvette

3. If not enough blood is applied to the test cuvette, can more be added?

a) Yes  
 b) No

4. How soon after applying blood to the test cuvette should the test be performed?

a) Within 30 seconds  
 b) Within 10 minutes  
 c) Within 60 minutes  
 d) Within 24 hours

5. What should be done if an air bubble is present in the test cuvette?

a) Proceed with testing  
 b) Use a feature to remove sample and add a sample again  
 c) Add more blood sample into cuvette until air bubble disappears  
 d) Repeat test using a new sample and test cuvette

Site Map | Printable View | © 2010 - 2011 ICnet CHSA - Integrated Cardiovascular Clinical Network SA | Developed by Syslinx

## APPN

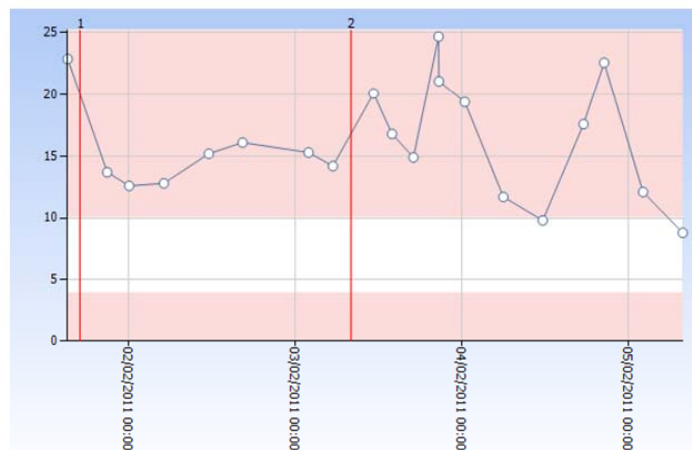
- Clinical and technical competencies
  - Sample collection
  - Quality control
  - Anticoagulation – INR
  - Diabetes
  - Lipids

[www.appn.net.au](http://www.appn.net.au)

## Integration into Clinical Databases

- FMC endocrinologists approached us looking at a way to capture ward glucose results (CCU)
  - Easily identify patients who have had a Glu>10mmol/L in the past 24hrs
  - Monitor patients on Insulin from outside of the ward
- Integrate other clinical information such as diabetic status, medications, HbA1c results

## Integration into Clinical Databases



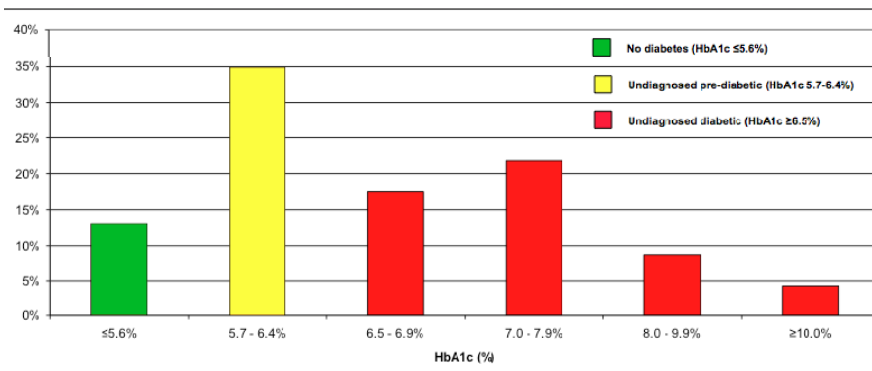
1. Other - Dosage:40 units BD Novomix 30 + [Modified correctional started on admission]  
2. Other - Dosage:Novomix 30 increased to 45u BD [+BB1 Correctional]

[Add Comment](#) [Add Medication](#) [Add Test Result](#)

## Integration into Clinical Databases

- Investigated all non-diabetic patients admitted to CCU with a  $\text{Glu} \geq 11.1 \text{ mmol/L}$  (3.6% of all admissions)
- Used HbA1c to determine diabetic status
  - 13%  $< 5.6\%$  (non-diabetic)
  - 35% 5.7-6.4% (undiagnosed pre-diabetic)
  - 52%  $\geq 6.5\%$  (undiagnosed diabetic)
- Other studies have shown high percentage of undiagnosed diabetes and pre-diabetes in hospital patients

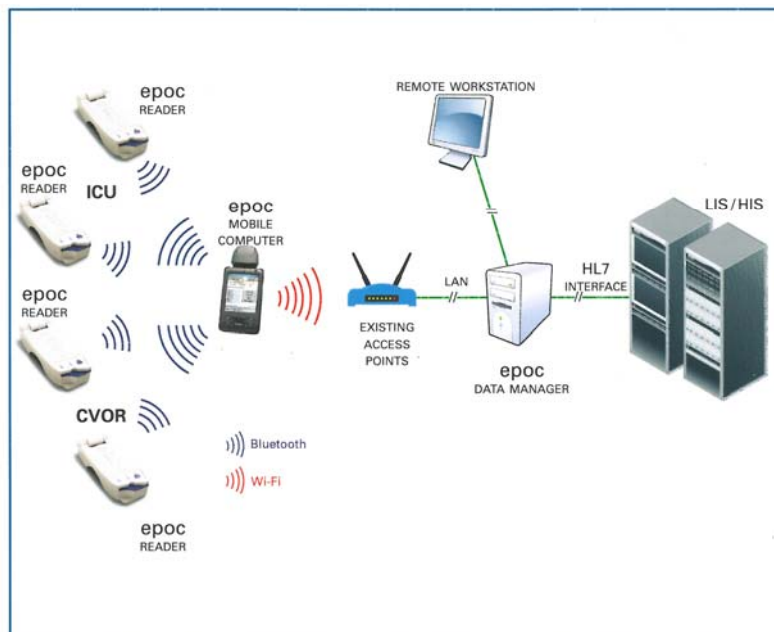
## Integration into Clinical Databases



HbA1c levels among patients with a Glu result  $>11.1$  without known diabetes

## New Technologies

- Bluetooth/wireless connections
  - Take away need for a 'docking station'
  - Increase portability
  - Reduced cables
  - Network points not needed



## **New Technologies**

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- PoCT coordinator able to 'control' the instrument remotely
  - Trouble-shooting
  - Perform electronic and calibration checks

## **General Practice Setting**

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- Still challenging
  - High cost of data manager systems
- INRlinx
  - Transferring results from the Roche CoaguChek XS Plus instrument to GP software
- Possibility to link these results into decision support software
  - Warfarin dosage
  - When to retest

## **Patient Self-Monitoring**

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- What happens to the results?
  - Who reviews them?
  - Are they acted on?
- Ideal for these results to be electronically captured for review
  - Patient
  - GP

## **HOME Trial**

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- Being carried out in Europe, UK, Australia and New Zealand
- Recent decompensated heart failure patients
  - PoCT fingerstick BNP
  - Weigh themselves – result transferred via bluetooth to the PoCT instrument
  - Other clinically relevant questions asked on the PoCT instrument – i.e. increased coughing, SOB, number of pillows
- Information transferred via GPRS to clinicians who can monitor and take appropriate action

## Conclusion

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- Vital for the management of a PoCT environment
- Needs to be tailored to the clinical setting that PoCT is being performed in
- New technologies are becoming available to increase connectivity efficiency and effectiveness

## The Future

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- Increased wireless capabilities
- Critical trends can be detected in patient data and control results
- Questionable results can be detected via delta checks
- Expansion into the community setting
- ???

**Thank You!!!**

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**“We back up our data on sticky notes because  
sticky notes never crash.”**