

Point of Care Testing Implementation Project – Challenges for Establishing a Managed PoCT Service

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Background

- Funding of \$5million has been made available through the COAG and National Partnerships Agreement Emergency Department capital program for Point of Care Testing for small Emergency Departments (EDs) in metropolitan, rural and remote areas.
- NSW Health Pathology has been asked to provide the sponsorship for a systematic approach to the assessment of needs, implementation and the conduct of quality and accreditation of PoCT devices.
- The program aims to provide for NSW an evidence based selection of PoCT devices that can be used at various facilities based on role delineation and clinical requirements. The procurement and progressive implementation and management will be based on a state-wide PoCT policy.

Scope

- Implementation of devices for Emergency Departments in rural and remote areas that do not have support of 24/7 laboratory onsite (includes small metropolitan Emergency Department)
- Initial test profile of UEC, Blood gases + lactate + haemoglobin, troponin, INR/PT
- Sites supported by a Private pathology provider are out of scope
- Upgrade Radiance software used to manage Radiometer POCT devices currently supported by a NSW Health Pathology Network to AQUIRE

Project Plan

Three phases

1. Pre-implementation (November 2012 – October 2013)
2. Implementation (November 2013 – December 2014)
 - New devices
 - Upgrade of software for existing devices
3. Post-implementation (January 2014 – December 2014)
 - Follow-up visits to assess implementation success
 - Accreditation of sites
 - Tender for 2015 QAP materials
 - Development of e-learning applications
 - Tender for additional devices/tests
 - Project evaluation



Project Objectives

1. Provide access to timely pathology results in rural, remote and small Emergency Departments (PoCT devices for in EDs in scope)
2. Monitor performance of all PoCT devices in use in EDs to ensure result accuracy (PoCT Management Software)
3. Transmit results electronically to LIS and then eMR (PoCT Management Software – Interface component)
4. Establish a PoCT Program that can be expanded to manage other PoCT devices (selected from an approved device list)
5. Establish a framework to ensure quality and sustainability of service

Key Benefits of PoCT

Benefits of a PoCT Service

1. Faster test results available leading to more timely treatment
2. Greater access to pathology testing
3. Increased clinician satisfaction
4. Increased patient satisfaction

Benefits of a Managed PoCT Service

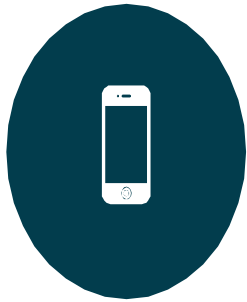
1. Devices are maintained appropriately to provide accurate and reliable results
2. Staff are trained and competency reassessed to ensure results are accurate and reliable and reagent wastage is reduced
3. Service provision is maintained
4. Service enhancement requests have a formal pathway for consideration

Project Status

- ✓ Pre-implementation (November 2012 – October 2013)
- Implementation (November 2013 – December 2014)
- Post-implementation (January 2014 – December 2014)



Project Statistics – Implementation phase



67%

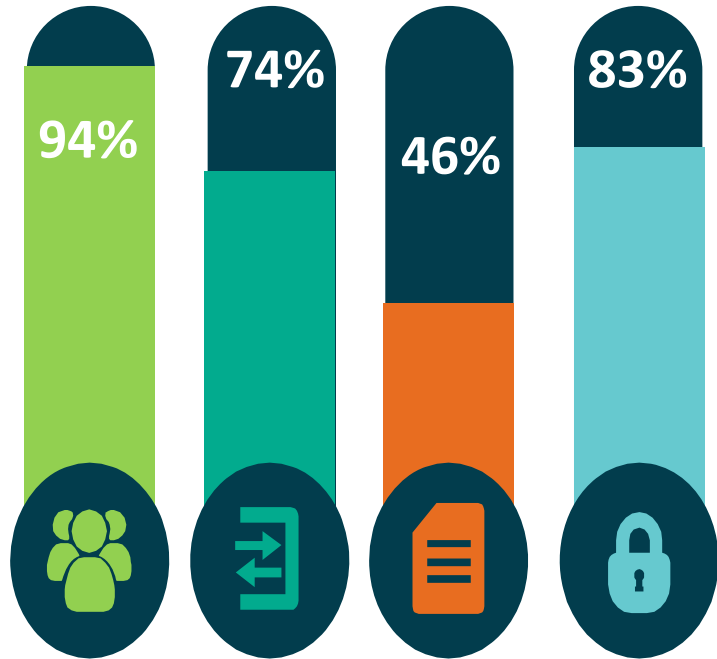
of Emergency Departments within scope to receive new PoCT devices have been through installation and implementation.



2

Is the number of Radiometer blood gas analysers currently supported by Pathology Networks that have been added to the State-wide PoCT management software (AQUIRE) so far.....over 90 to go

Implementation Statistics



Calculated from sites where new devices implemented

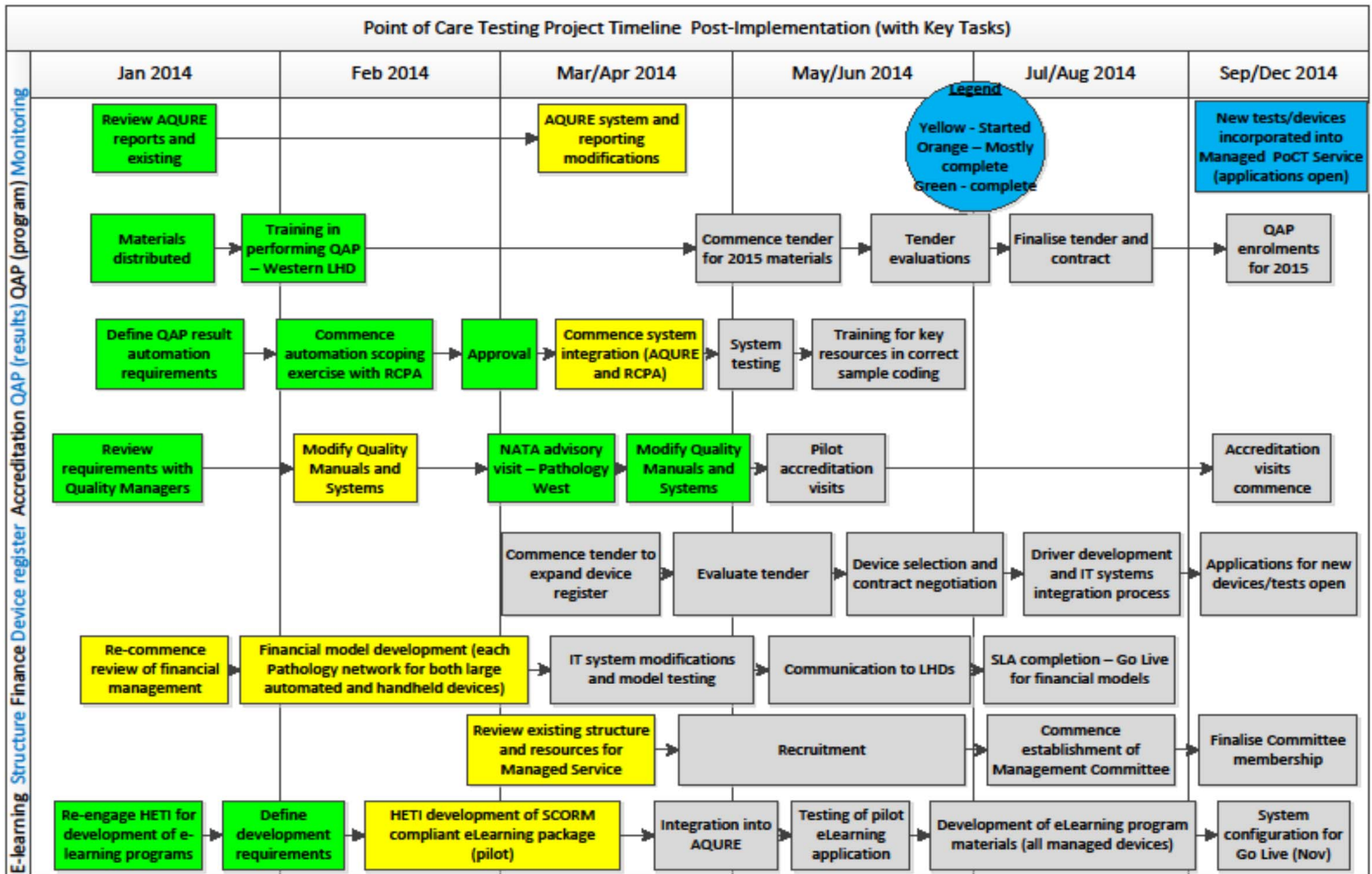
- Super-users trained
- Network connectivity fully operational
- Service Level Agreement signed by testing location
- Operator lockout enabled on devices

Notes

- Super-users at some sites have left following training and new super-users will have to be identified and trained
- Network connectivity problems are mainly due to switch capacity and issues with some CoaguChek devices
- Service level agreements are being reviewed by Health Service Manager's in many instances
- Operator lockout has been delayed in some larger testing locations to allow for more operators to be trained or not enabled where connectivity has not been established



Post Implementation Summary



Clinical Benefits – Example 1

Narromine - Just after go live!

- 73 year old female presented to ED feeling unwell but no obvious symptoms
- ED staff ran a CHEM8+ cartridge on the i-STAT
- Results indicated low potassium
- Gave the patient potassium and patient immediately improved
- Patient not transferred to Dubbo hospital

Note - A severe drop in potassium level can lead to serious heart rhythm problems that can be fatal

Clinical Benefits – Example 2

- 75 year old male presented to Peak Hill ED in some discomfort but no obvious symptoms and eCG inconclusive
- ED nursing staff ran a Troponin on the i-STAT (no Dr onsite)
- Troponin was significantly elevated
- Arranged transfer to Dubbo, patient's myocardial infarction apparently extended en route but was able to get the correct care immediately.
- Arrived at Dubbo with staff aware of testing performed via access to eMR, unnecessary repeat testing avoided.
- **Possibly life saving**

Challenge 1 – Changing Culture and Bad Habits

Plan

1. Regular site visits by hub coordinators
2. PoCT devices connected to middleware and capable of bidirectional communication to not only provide information on performance but also allow for remote management including operator lockout
3. Undergoing accreditation for each testing location

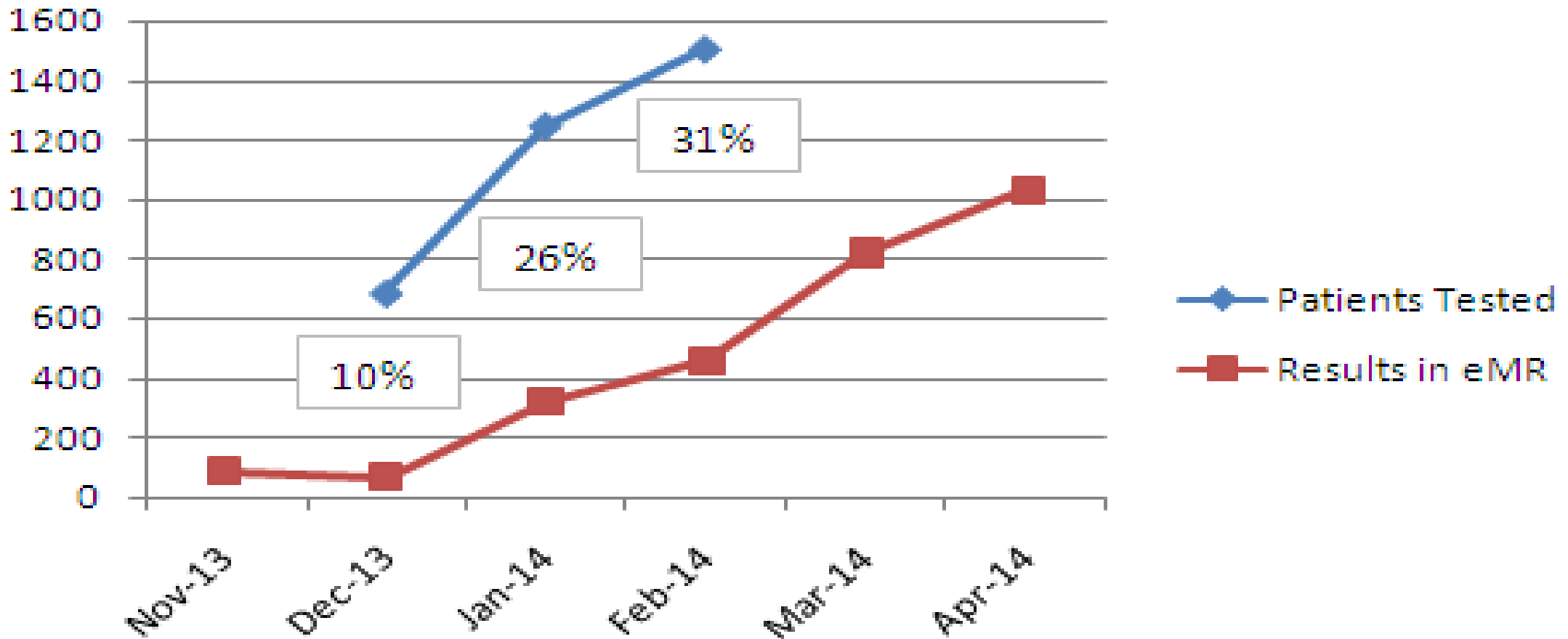
Challenge 2 – Improving reliability of results – Lowest wastage rate (i-STAT)

Rank	Site	Wastage Rate (%)	Tests performed
1	Urana	0	23
1	Dunedoo	0	23
1	Grenfell	0	19
1	Nyngan	0	19
1	Gulargambone	0	6
1	Narromine	0	3
7	Brewarrina	3.9	77
8	Holbrook	4.2	48
9	Cobar	6.1	82
10	Lockhart	7.1	14

Data obtained from testing completed in April



Challenge 3 - Positive Patient identification (rural EDs)



**Graphs courtesy of Pathology West (Juliana Iles-Mann, Brad Carter)

Challenge 3 - Positive Patient identification

Plan

1. Software updates for i-STATs to incorporate patient identification check
2. Work with testing locations to improve registration of patient in hospital information systems

Challenge 4 – Training and Competency Assessment

Plan

1. Training of super-users for each site to provide training to staff
2. Operator training sessions as part of a 're-implementation' plan across the whole state
3. Ongoing periodic assessment using e-learning tools generated by NSW Health's Health Education Training Institute (HETI)
4. Targeted training based on reports generated from middleware software
5. Enabling operator lockout

Challenge 4 – Training and Competency Assessment

Operator Performance Tracking

Site	Operator	Cartridges used	Wasted cartridges	Wastage (%)
Baradine MPS BAR-ED	28013448	5	1	20
	28013686	1	0	0
	28020162	2	0	0
	40037918	6	0	0
	60011428	2	0	0
	60013069	1	0	0
	60013810	2	1	50
Total		19	2	10.5

Challenge 5 – External Quality Assurance Compliance

Plan

1. Train super-users at sites in how to reconstitute materials
2. Develop barcoding linking samples to program details to provide consistent naming convention
3. Report prior to submission end date to check completion
4. Follow-up with sites
5. Automated entry from middleware to QAP vendor reporting software
6. Feedback to sites

Challenge 6 –Quality Control Compliance

Plan

1. Train super-users at sites in how to reconstitute materials
2. Update software on i-STATS to enable check mechanism that QC acceptable (already available on CoaguChek)
3. Linking stock delivery and QC timeframes
4. Develop reports suitable for monthly QC testing handheld devices
5. Follow-up with sites

Challenge 7 – Stock Management

Plan

1. Establish centralised delivery locations for Pathology Networks
2. Mapping logistics
3. Introducing temperature controlled transportation and tracking systems
4. Working with vendors to get longer expiry dates for consumables

Challenge 8 – Reducing Costs to Testing Locations

Plan

1. Frequent tenders to take advantage of technology changes
2. Tenders for external Quality Assurance Programs
3. Reducing the frequency of QAP testing
4. Gaining accreditation and then increasing opportunities for revenue

Questions?

