

An example of providing EQA reports that become part of the participants quality management system

Tony Badrick

October 2022

RCPAQAP

The Royal College of Pathologists of Australasia
Quality Assurance Programs

Approach

1. EQA – role and cost
2. EQA and QC
3. EQA app
4. EQA and QMS

Approach

1. EQA – role and cost
2. PoCT - EQA and QC
3. PoCT - EQA app
4. EQA and QMS

What is

- Patient a
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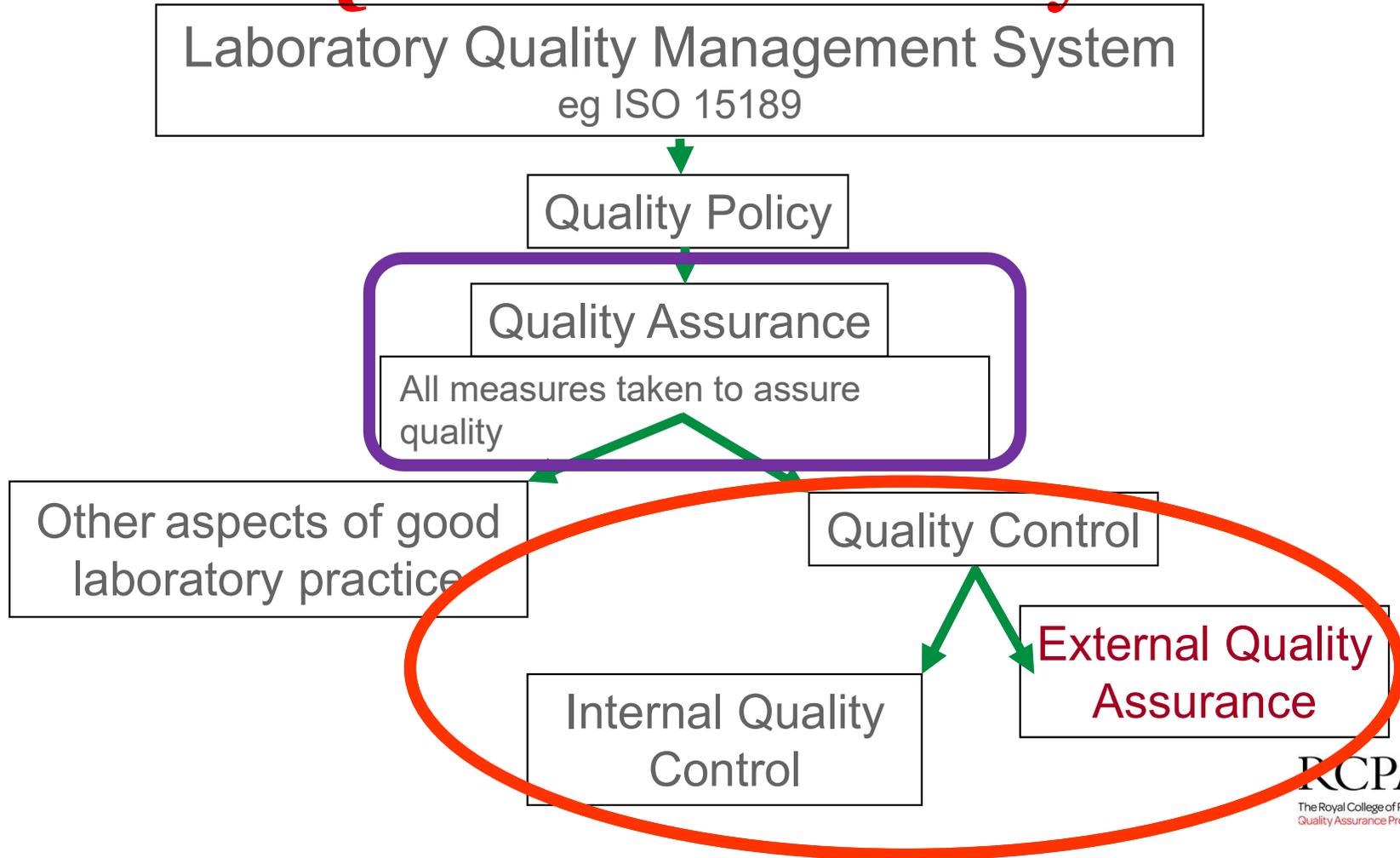


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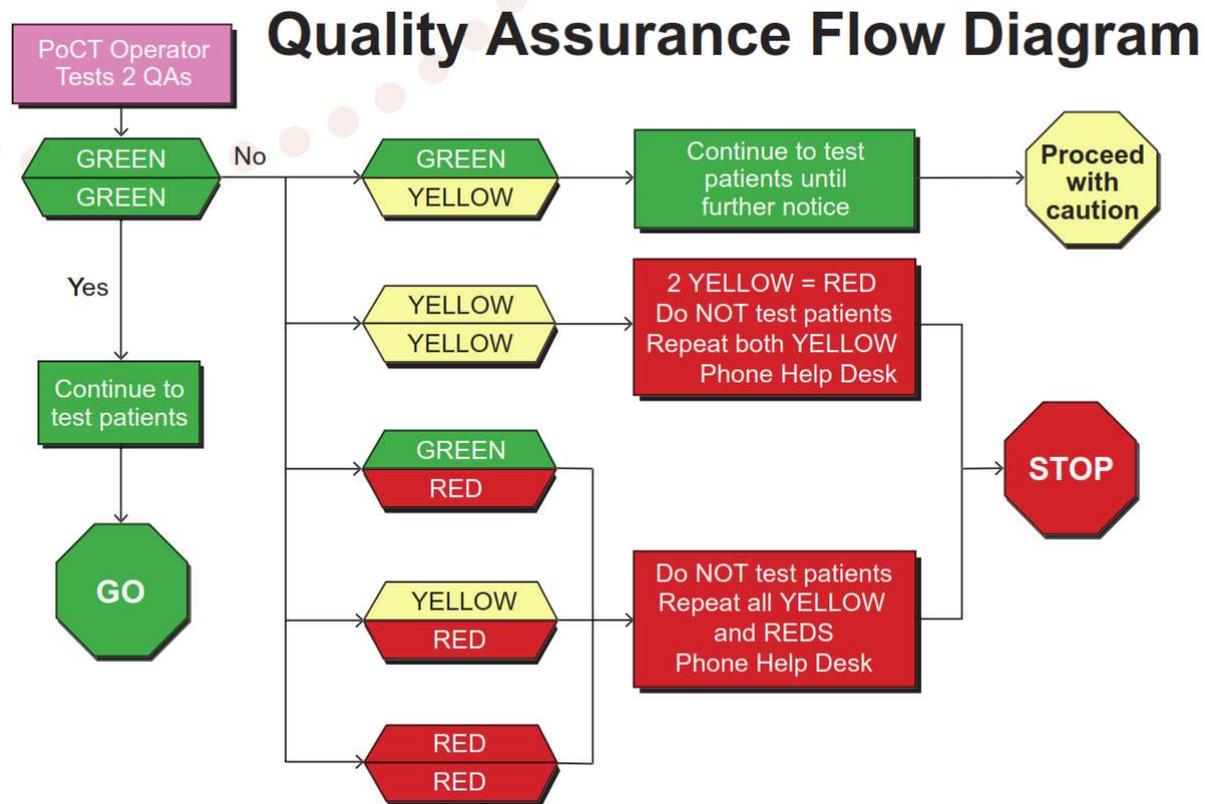
Position of EQA in the Laboratory



Approach

1. EQA – role and cost
2. PoCT - Trend EQA and QC
3. PoCT - EQA app
4. EQA and QMS

Real time feedback provided – Aboriginal Health PoCT EQA



In range “green” real-time feedback

haemoglobin a1c

Your quality assurance testing is acceptable.

1st Sample Number:	41 - 1	2nd Sample Number:	41 - 2
HbA1c NGSP: %	5.70	HbA1c NGSP: %	9.80
HbA1c IFCC: mmol/mol	39	HbA1c IFCC: mmol/mol	84

Red Flag real-time feedback

haemoglobin a1c

Your quality assurance testing requires further attention. **DO NOT test Patients.** Call the QAAMS Help Desk on 08 8201 7555.

1 st Sample Number:	41 - 1	2 nd Sample Number:	41 - 2
HbA1c NGSP: %	5.70	HbA1c NGSP: %	12.00
HbA1c IFCC: mmol/mol	39	HbA1c IFCC: mmol/mol	108

One “caution” real-time feedback

urine acr

You have at least 1 quality assurance result in the warning zone. You may proceed with caution and continue to test patients until further notice.

1 st Sample Number:	41 - 1	2 nd Sample Number:	41 - 2
Urine ACR: mg/mmol	0.70	Urine ACR: mg/mmol	18.20
Urine Albumin: mg/L	14.1	Urine Albumin: mg/L	196.3
Urine Creatinine: mmol/L	19.00	Urine Creatinine: mmol/L	10.80

Two cautions equals a red real-time feedback

urine acr

Your quality assurance testing requires further attention. **DO NOT test Patients.** Call the QAAMS Help Desk on 08 8201 7555.

1 st Sample Number:	41 - 1	2 nd Sample Number:	41 - 2
Urine ACR: mg/mmol	0.80	Urine ACR: mg/mmol	18.20
Urine Albumin: mg/L	14.1	Urine Albumin: mg/L	196.3
Urine Creatinine: mmol/L	21.00	Urine Creatinine: mmol/L	10.80

Aboriginal Health PoCT QC and QA

- QC and QA are reviewed every month with an online meeting between QAAMS management team and RCPAQAP.
- Each sites submitted results are reviewed comparing QC performance with QA performance.
- Any poor performing sites are followed up by the QAAMS management team via a phone call.
- Sites that have not submitted enough QA and QC are also followed up to submit more testing.

Haemoglobin A1c (NGSP) (%) : Supervisor20097 Report for Cycle 46 - All Specimens (Continued)

Lab	JAN-01	JAN-02	FEB-03	FEB-04	MAR-05	MAR-06	APR-07	APR-08	MAY-09	MAY-10	JUN-11	JUN-12	
4181			7.4 green	11.5 red									H 35V 098
4184	9.8 green	5.7 green			8.3 green	6.4 green			6.4 green	9.7 green			H 35V 098
4185	10.0 green	5.6 green	7.3 green	9.2 green	8.3 green	6.4 green	5.9 green	8.6 green	6.4 green	10.0 green			H 35V 098
4188	10.0 green	5.8 green	7.5 green	9.4 green	8.5 green	6.7 green							H 35V 098
4190	9.9 green	5.4 green	7.4 green	9.3 green	8.5 green	6.8 orange	5.4 green	8.1 green	6.5 green	12.5 red			H 35V 098
4198	10.0 green	5.7 green	7.5 green	9.1 green	8.4 green	6.4 green	5.3 green	8.2 green	6.7 green	9.7 green			H 35V 098
4199	10.3 green	5.5 green									7.3 green	9.1 green	H 35V 098
4200	9.9 green	5.6 green	7.7 green	9.6 green	8.6 green	6.5 green	5.7 green	8.6 green	6.9 orange	10.0 green			H 35V 098
4204	9.7 green	5.5 green	7.4 green	9.3 green	7.9 green	6.3 green	5.2 orange	8.0 green	6.2 green	6.7 red	7.3 green	9.2 green	H 35V 098
4206	10.1 green	5.5 green	7.4 green	9.0 green	8.2 green	6.5 green	5.5 green	8.2 green	6.6 green	9.9 green	7.5 green	9.1 green	H 35V 098
4207	10.5 green	5.8 green	7.6 green	9.4 green	8.7 orange	6.8 orange	5.8 green	8.8 orange	7.2 orange	10.3 green	7.8 orange	9.5 green	H 35V 098
4208	10.2 green	5.5 green	7.4 green	9.7 green	8.7 orange	6.6 green	5.6 green	8.3 green			7.4 green	9.3 green	H 35V 098
4209	10.1 green	5.5 green	7.6 green	9.3 green	8.2 green	6.6 green	5.8 green	8.8 orange	6.8 green	10.5 green	7.7 green	9.5 green	H 35V 098
4211	11.8 red	5.8 green	6.9 green	8.7 green	8.3 green	6.5 green	6.1 green	8.2 green	6.0 green	10.5 green	7.5 green	9.7 green	H 35V 098
4212	10.3 green	5.8 green	7.5 green	9.4 green	8.5 green	6.7 green	5.7 green	8.5 green	6.6 green	10.3 green			H 35V 098
4213	10.0 green	5.4 green	7.2 green	9.3 green	7.2 red	9.2 red	5.6 green	8.5 green	6.4 green	9.8 green	7.3 green	9.1 green	H 35V 098
4214	10.2 green	5.9 green			8.2 green	6.6 green	5.7 green	8.5 green	6.6 green	10.1 green			H 35V 098
4215											10.2 red	9.4 green	H 35V 098
4216	5.5 red	11.1 red	7.7 green	9.2 green	8.6 green	6.7 green		6.7 green	10.1 green				H 35V 098
4217	10.0 green	5.8 green	7.5 green	9.2 green	8.4 green	6.4 green	5.7 green	8.0 green					H 35V 098
4219	10.0 green	5.7 green	7.2 green	9.1 green	8.4 green	6.3 green	5.7 green	8.2 green					H 35V 098
4220	9.6 green	5.0 orange	7.4 green	9.2 green	8.5 green	6.3 green	5.5 green	8.2 green	6.5 green	10.5 green	7.4 green	9.4 green	H 35V 098
4223	10.0 green	5.5 green	7.5 green	9.3 green	8.4 green	6.4 green	5.6 green	8.1 green	6.7 green	10.4 green	7.3 green	9.3 green	H 35V 098

QC good

Same sample run twice? QC acceptable

Only June submitted. QC normal sample was out of range. To be followed up. More testing required

Reversed result - QC good but more testing required

Approach

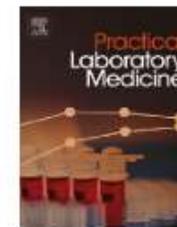
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Contents lists available at [ScienceDirect](#)

Practical Laboratory Medicine

journal homepage: www.elsevier.com/locate/plabm



The challenge of producing an EQA for the COVID-19 pandemic

Tony Badrick^{*}, Louise Wienholt, Daniel Fone, Derek Holzhauser

The Royal College of Pathologists of Australasia Quality Assurance Programs, St Leonards, Sydney, Australia



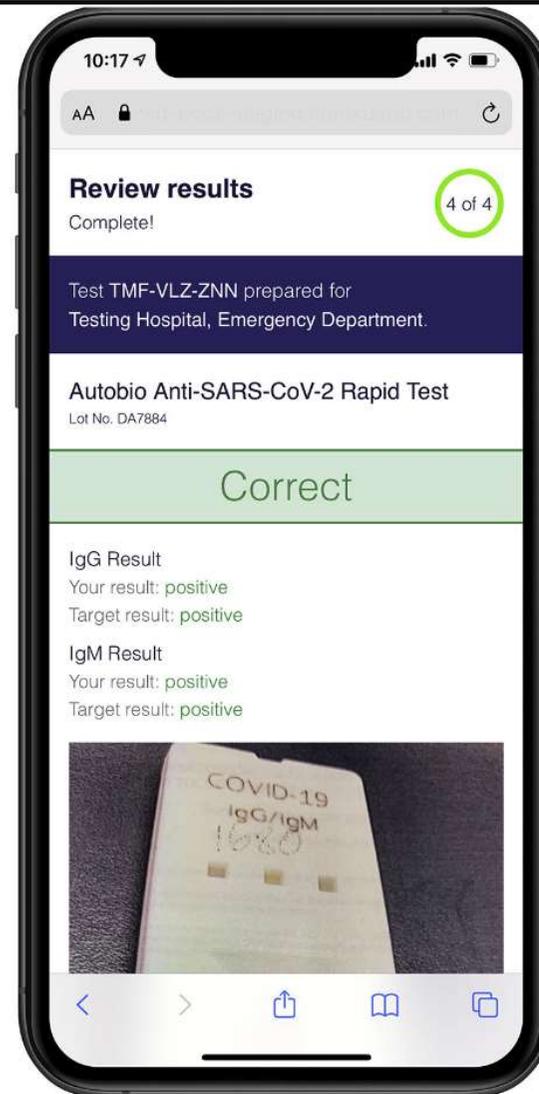
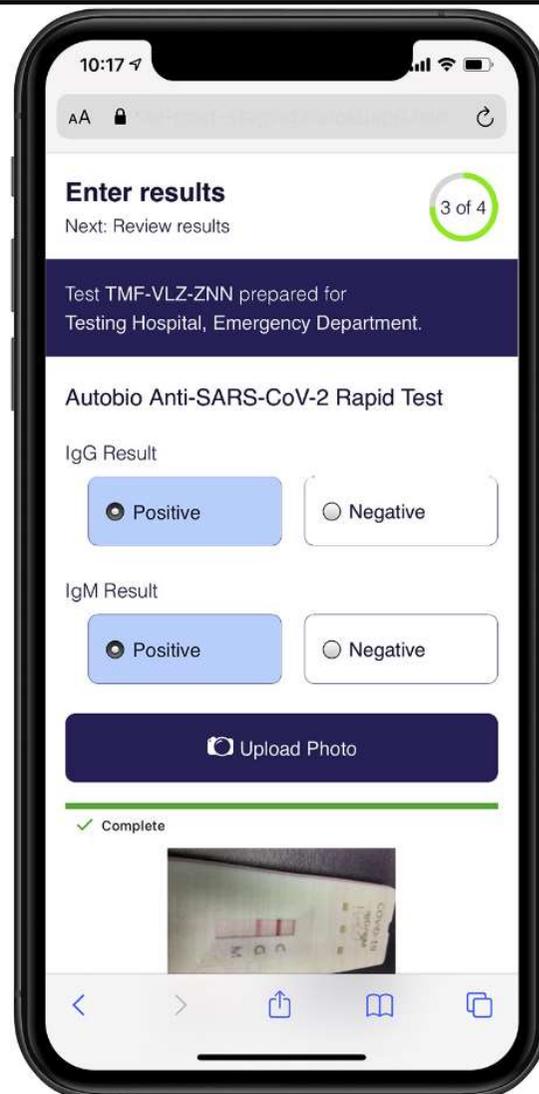
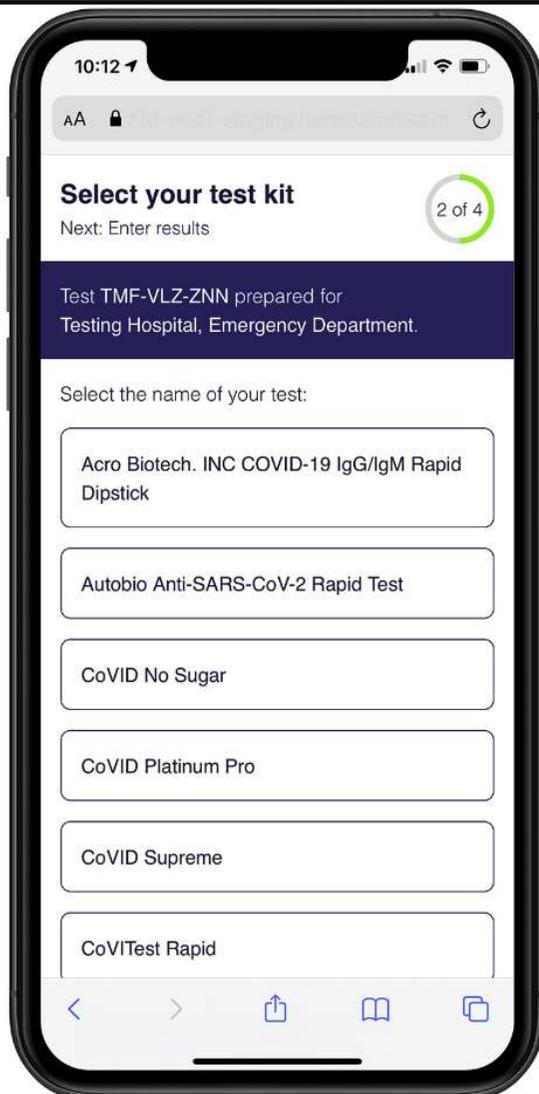
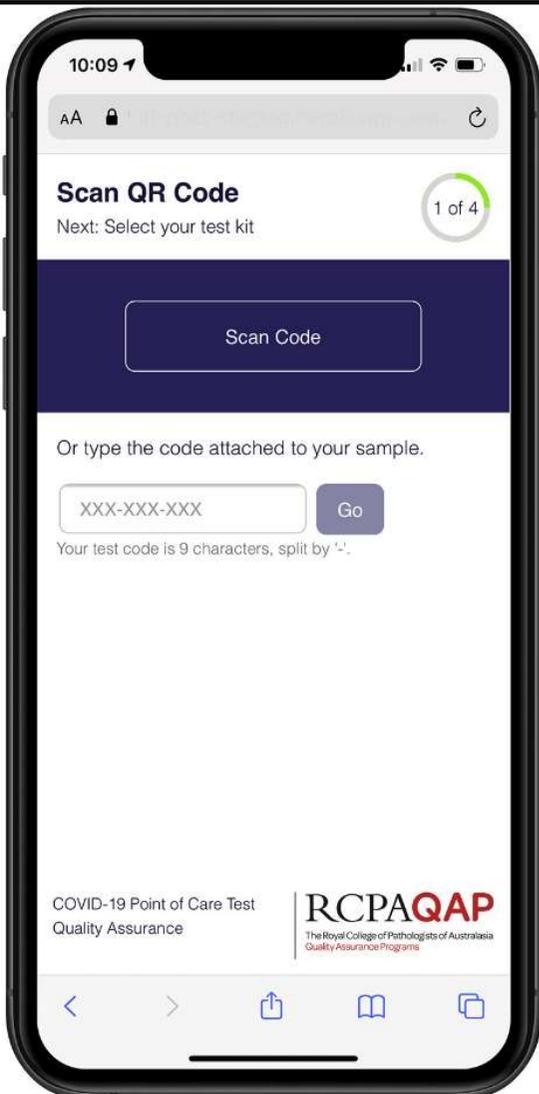
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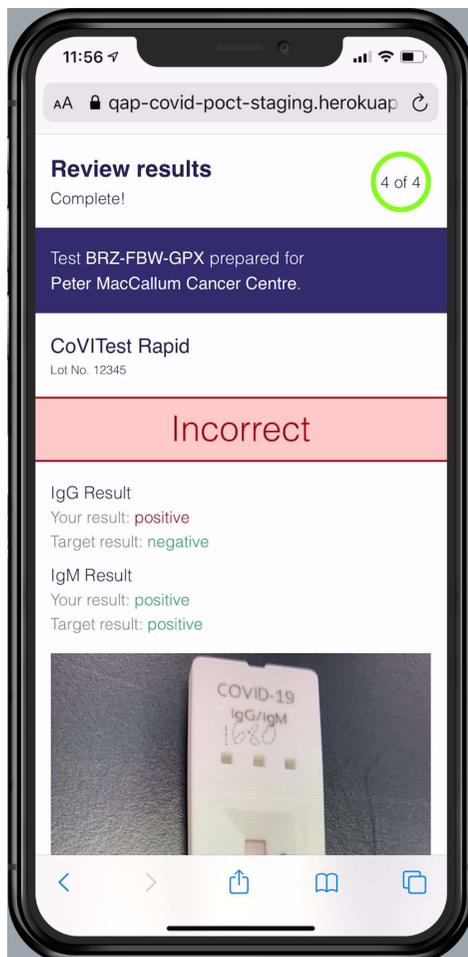
Keywords:

PoCT
COVID-19
EQA
Phone app

ABSTRACT

The COVID-19 pandemic has changed the clinical medicine landscape. The importance of pathology testing has come to the forefront. Patients or potential patients are dealing directly with laboratories as they line up in carparks or testing staff come to the front doors to obtain samples. Laboratories have had to increase capacity to deal with the high volumes of testing driven by the need to identify and quarantine cases. Supporting this effort, External Quality Assurance scheme providers have also needed to produce COVID-19 Proficiency Testing (PT) programs which are fit for purpose. COVID-19 Point of Care testing has become critical frontline testing and has required the PT programs to be simple to use, readily accessible and robust. We describe a COVID-19 PoCT Serology PT program supported by a mobile phone App. The App is described, and the advantages made explicit. This App suggests that the way that PoCT EQA/PT programs may be deployed in the future.





Participant Tests → SPT-DBB-JDT

SPT-DBB-JDT Reviewed

Sample CVPOC20-03

Enrolment [SE/99999](#)
Testing Hospital, Emergency Department
Derek Holzhauser
<derek.holzhauser@rcpaqap.com.au>
02 9999 9999

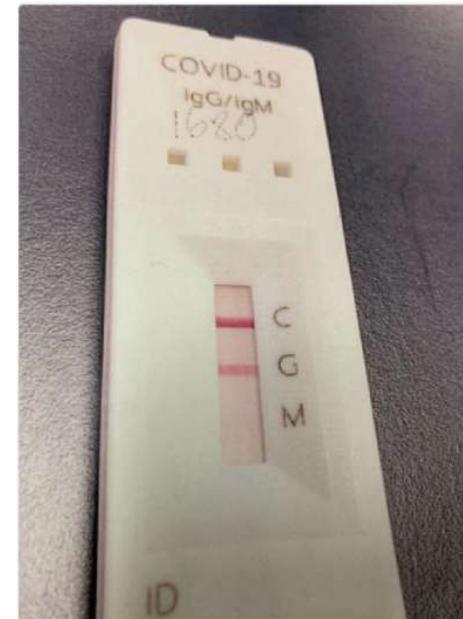
Dispatch
Manual



	CVPOC20-03	Submission
IgG Result	positive	positive
IgM Result	negative	negative

Performed by Derek Holzhauser

Test Kit OnSite COVID-19 IgG/IgM Rapid Test
Lot No. 9999999



Reviewed as **valid** by Derek Holzhauser

Review notes -

 Report

Approach

1. EQA – role and cost
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RCPAQAP Key Feedback from participants

- Enrolment process fairly easy
- Invoicing can be problematic
- Too many notifications of things that aren't relevant
- Changing methods can be difficult
- Would like to be able to set up survey dates with reminders in my own calendar
- Dashboard of open/close dates
- Reports are generally well liked
- The existing review process is cumbersome

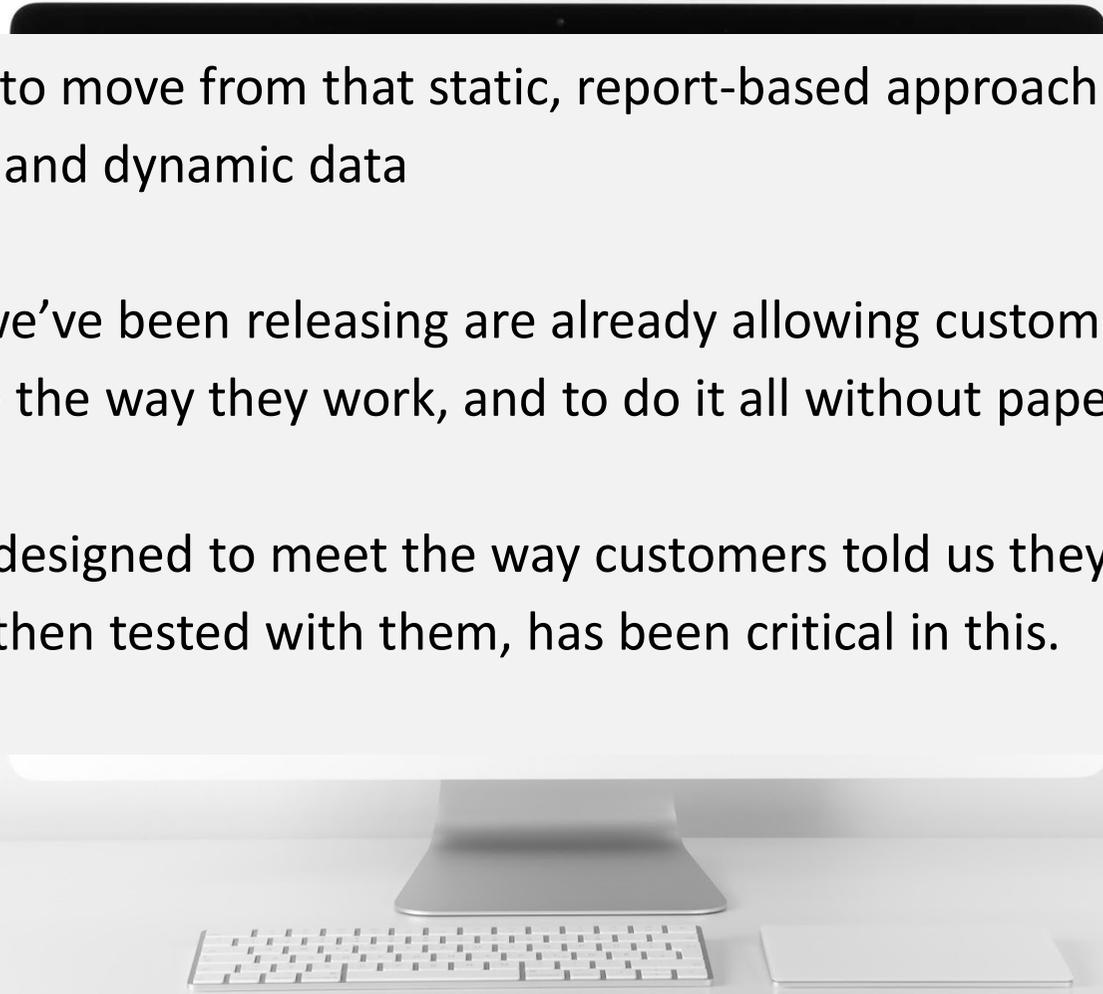
Customer experience

(The new)

One of our goals is to move from that static, report-based approach to real-time feedback and dynamic data

The new features we've been releasing are already allowing customers to really streamline the way they work, and to do it all without paper.

New functionality, designed to meet the way customers told us they want to work, and then tested with them, has been critical in this.



Report Review

In Progress

Add Reviewer (s)

General Chemistry and Therapeutic Drugs Program . Survey.V2: 3 . Cycle: 107 . Issue date: 18 May 2018

Summary of Results Outside the Allowable Limits of Performance

Measurands	Results	Assessment	Count	Action
Creatinine	■	High result sample 1 and 2	3	View comments
Lactate	■	High result sample 1	7	View comments
p O2	■	Low result sample 1	0	View comments
Haemoglobin Concentration	■	Low result sample 1	1	View comments

Total Results Received: 90 Expected: 90 Version .1

3 Reviewers
● SB ● JB ● LT Linda Timms

Comments

lactate ×

Write a comment...

Tag: lactate ▼ Post comment

● Linda Timms Jun 3

This is my review comments on Lactate dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. [lactate](#)

● Sarah Harris Replied Jun 1

Please move Lactate to done. [lactate](#)

● Linda Timms

Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. [lactate](#)
May 30

● Linda Timms May 28

This is my review comments on Lactate dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. [lactate](#)

Single pane Report view and simplified commenting



REPORT TROUBLESHOOT NOTES ATTACHMENTS

CP_L154_JNT_Lab9990_Run4 3 / 5

Due Date : 09/04/2018

Specimen 54-07

Triglyceride (mmol/L)

YOUR DATA

No Results Received for 54-07 or 54-08

Your Method Classification : 33

33 Alert

Analytical Performance Specifications
+0.20 up to 1.60, +12% >1.60 mmol/L

Participant No. 9990

Specimen 54-08

All Results (35)

Your Method 33 (0)

All Alert Analysers (0)

Current Data for Cycle 54

Spec.	Method	Target	Result
54-01	33	1.75	
54-02		0.41	
54-03	33	4.77	
54-04		1.08	
54-05	33	1.41	
54-06		0.74	
54-07	33	4.77	
54-08		0.41	
54-09			
54-10			
54-11			
54-12			

SUMMARY DATA

Special Lipids

Summary of Results Outside the Allowable Limits of Performance

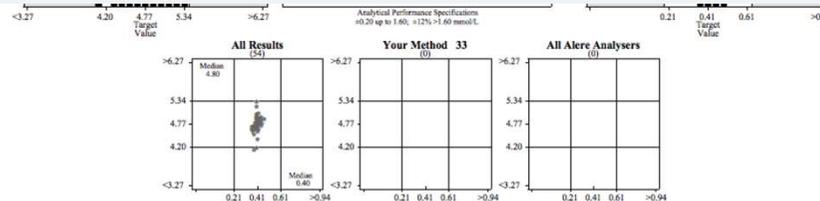
Result Flagging

Measurands	Results	Assessment	Comments	Count	Action
Creatinine		High result sample 1 and 2	<input type="button" value="Add comment"/>	3	View comments
Lactate		High result sample 1	<input type="button" value="Add comment"/>	7	View comments
p O2		Low result sample 1	<input type="button" value="Add comment"/>	0	View comments
Haemoglobin Concentration		Low result sample 1	<input type="button" value="Add comment"/>	1	View comments

Total Results Received: 90

Expected: 90

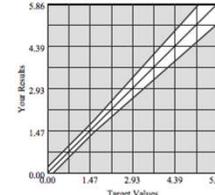
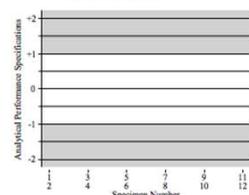
Version .1



Current Data for Cycle 54

Spec.	Method	Target	Result
54-01	33	1.75	
54-02		0.41	
54-03	33	4.77	
54-04		1.08	
54-05	33	1.41	
54-06		0.74	
54-07	33	4.77	
54-08		0.41	
54-09			
54-10			
54-11			
54-12			

SUMMARY DATA



Special Lipids

SH Sarah Harris Replied Jun 1

Please move Lactate to done. [lactate](#)

LT Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. [lactate](#)
May 30

LT Linda Timms May 28

This is my review comments on Lactate dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. [lactate](#)

Commenting on individual measurands

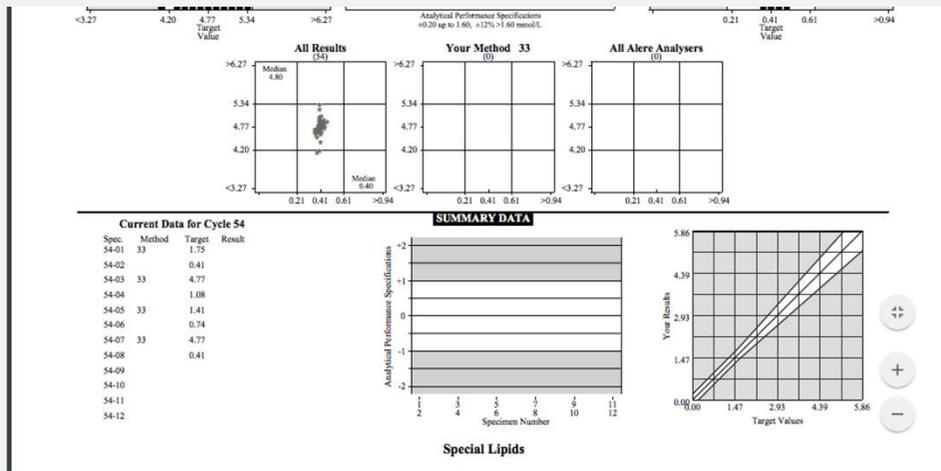
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Measurands	Results	Assessment		
Creatinine		High result sample 1 and 2		3 View comments
Lactate		High result sample 1		7 View comments
p O2		Low result sample 1		0 View comments
Haemoglobin Concentration		Low result sample 1		1 View comments

Add comment

Total Results Received: 90 Expected: 90

Version .1



SH Sarah Harris Replied Jun 1
Please move Lactate to done. [lactate](#)

LT
Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. [lactate](#)
May 30

LT Linda Timms May 28
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myQAP logo

- Reports
- Certificates
- Result Entry
- Analytics
- Data Extract
- Program Calendar

Add report reviewers

Navigation arrows

Vitamins

Survey Report, Survey 10, v1.0, 6 Oct 2022

CHEMICAL PATHOLOGY QAP CP/99992

No Label Not Started Analyse

REPORT ATTACHMENTS

RCPAQAP
The Royal College of Pathologists of Australasia
Quality Assurance Programs

Vitamins 2022

Survey Report

Survey 10, Closing Date 3 October 2022

Report prepared by
Chemical Pathology

Report authorised by
Peter Graham

Report issued
6 October 2022

Version 1. Initial Publication.

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Mention people using '@'

Tags

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Add comments and add filterable tags on measurands

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AD DH

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@Derek Holzhauser please review Vitamin B2, there seems to be a bias

Tags

Vitamin B2

Post

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- AD
- DH

Comments

Mention people using '@'

Tags

1 Post

Filter

DH Derek Holzhauser RCPAQAP Staff

@Derek Holzhauser please review Vitamin B2, there seems to be a bias

Vitamin B2

01:03PM

Analyse survey results
in analytics

- Reports
- Certificates
- Result Entry
- Analytics
- Data Extract
- Program Calendar

← →

Vitamins

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01:03PM

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Vitamins

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ABN 32 003 520 072

Analyse [X]

Samples (Optional)

Measurand (Optional)

[Cancel] [Go]

Reviewers [i] [X]

[+]
AD DH DH ...

Comments

Mention people using '@'

Tags

1 [Post]

Filter

DH Derek Holzhauser [RCPAQAP Staff] ...

@Derek Holzhauser please review Vitamin B2, there seems to be a bias

Vitamin B2

01:03PM

Analytics ⓘ

Discipline: **Chemical Pathology** | Program: **Vitamins** | Enrolment Year: **2022**
 Measurand: **Vitamin B2**

- YOUDEN PLOT
- MEASURAND HISTOGRAM
- LINEAR REGRESSION
- METHOD COMPARISON

Measurement System	Sample CP-VI-22-20 (Sep 2022)					Sample CP-VI-22-19 (Sep 2022)				
	n	Median nmol/L	Mean nmol/L	SD	CV%	n	Median nmol/L	Mean nmol/L	SD	CV%
Sample Preparation Protein Precipitation + Solvent Extraction	1	437.0	437.0	–	–	1	127.0	127.0	–	–
Sample Preparation: Protein Precipitation + Acid Extraction	2	649.5	649.5	–	–	2	319.0	319.0	–	–
Sample Preparation: Protein Precipitation - No Extraction	6	468.0	475.5	32.6	6.9	6	174.0	174.7	5.7	3.3
Analytical Principle	n	Median nmol/L	Mean nmol/L	SD	CV%	n	Median nmol/L	Mean nmol/L	SD	CV%
HPLC: Fluorometric detection	7	457.0	458.3	13.1	2.9	7	172.0	167.1	18.2	10.9
Liquid chromatography tandem-mass spectrometry (LC-MSMS)	2	690.5	690.5	–	–	2	321.5	321.5	–	–
Reagent	n	Median nmol/L	Mean nmol/L	SD	CV%	n	Median nmol/L	Mean nmol/L	SD	CV%
Brown-Lee	1	475.0	475.0	–	–	1	168.0	168.0	–	–
Chromsystems	5	454.0	469.8	40.5	8.6	5	172.0	165.6	22.1	13.4
Own reagent	2	649.5	649.5	–	–	2	319.0	319.0	–	–
Recipe	1	466.0	466.0	–	–	1	179.0	179.0	–	–
Calibrator	n	Median nmol/L	Mean nmol/L	SD	CV%	n	Median nmol/L	Mean nmol/L	SD	CV%
Chromsystems	8	461.5	514.3	136.0	26.4	8	177.0	205.6	104.3	50.7
In-house calibrator	1	475.0	475.0	–	–	1	168.0	168.0	–	–

Analytics

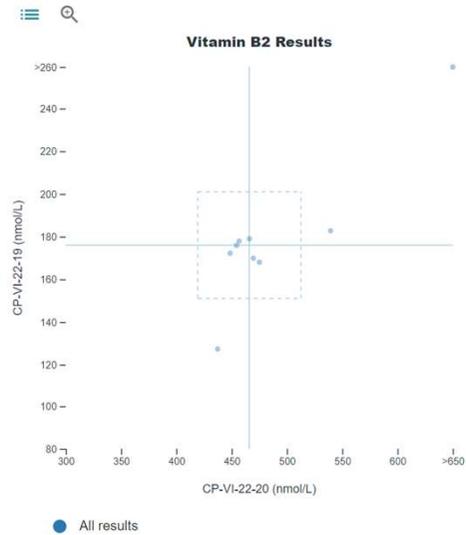
Discipline: **Chemical Pathology** | Program: **Vitamins** | Enrolment Year: **2022**

Measurand: **Vitamin B2** | Prev Next

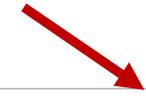
YOUDEN PLOT | MEASURAND HISTOGRAM | LINEAR REGRESSION | METHOD COMPARISON

Select all participants

Participants



Filter samples and select methods for analysis



Method	n	X axis CP-VI-22-20 (Sep 2022)		Y axis CP-VI-22-19 (Sep 2022)	
		Median nmol/L	APS nmol/L	Median nmol/L	APS nmol/L
All	9	466	419-513	176	151-201

Custom methods

- Measurement System
 - Other
 - Sample Preparation Protein Precipitation + Solvent Extraction
 - Sample Preparation: Protein Precipitation + Acid Extraction
 - Sample Preparation: Protein Precipitation - No Extraction
- Analytical Principle
 - HPLC: Fluorometric detection
 - Liquid chromatography tandem-mass spectrometry (LC-MSMS)
 - Other
- Reagent
 - Brown-Lee
 - Chromsystems
 - Other

Summary

Adding Value to reports – value for participants

Cost of EQA is often in the time it takes to deal with samples and results

Need to simplify reports and review process