



SIQAG

South Island Quality Assurance Group for Biochemistry

Biochemistry: Agreed Reference Intervals Document

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Introduction

The South Island Quality Assurance Group (SIQAG) for Biochemistry was established in 2008 as part of a comparability project between Canterbury Health Laboratories, Southern Community Laboratories, Med Lab South and Grey Hospital Laboratory. This project was initiated as part of a larger programme of work looking at the development of a regional results repository in the Canterbury region, similar to the Test Safe model adopted in Auckland.

The scope of work was initially limited to tests from the Health PAC schedule though it was agreed that other tests identified by this group should be reviewed.

Chemical Pathologists and senior Medical Laboratory Scientists from each laboratory met and pragmatically assessed tests for comparability. Where comparability was questionable, comparison testing was initiated.

In order to ensure that results reported to Eclair would cumulate and display correctly, each analyte that was deemed comparable had the following reviewed and agreed;

- Name (standardised to LOINC recommendation)
- reference interval
- units
- decimal places reported too
- LOINC code

Labnet partners, Taranaki and Hawke's Bay, which share the Delphic Laboratory System with Canterbury Health Laboratories, were consulted during the sign-off process to ensure that proposed reference intervals could be implemented across all laboratory sites.

The Auckland Regional Quality Assurance Group (ARQAG) and the Lower North Island Quality Assurance Group (LNIQAG) recommended reference intervals were also reviewed with a view to agreeing ranges nationally where possible.

The SIQAG for Biochemistry asks that members adopt the recommendations outlined in this document so that analyte / test information can be standardised wherever possible. It should be recognised that this is a working document and further recommendations may be adopted from other working groups.

It is the responsibility of the SIQAG for Biochemistry to ensure that this document remains current.

The SIQAG for Biochemistry: Agreed Reference Intervals Document is not a definitive list of Biochemistry "normal" reference intervals. It only details parameters and reference intervals that have been agreed across the three laboratory providers in Canterbury. Contact individual laboratories directly if you require a comprehensive set of reference intervals.

Albumin

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BP2	LOINC Code	1751-7
Reported to (no DP)	0	Units	g/L
Paed Range Needed	Yes	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	BCG
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	BCG
MLS Analyser	Roche P Module	MLS Method	BCG
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	BCG
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	BCG
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
< 1 year	30 – 45
1 + (Adult)	35 – 50

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges for paediatric tests and adults), it was agreed that there should only be a paediatric range for children less than 1 year of age.
June 2009	Analyte reference intervals required changing by CHL, agreed by Taranaki.

Alkaline Phosphatase

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BZ5	LOINC Code	6768-6
Reported to (no DP)	0	Units	U/L
Paed Range Needed	Yes	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	p-nitrophenol at 404nm
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	AMP (IFCC)
MLS Analyser	Roche P Module	MLS Method	AMP (IFCC)
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	AMP (IFCC)
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	p-nitrophenol at 404nm
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval	
0 – 1 year	60 – 500	
1 year – 10 years	80 – 360	
	Female	Male
11 years – 15 years	80 – 400	90 – 450
16 years – 18 years	50 – 200	60 – 300
> 18 + (Adult)	30 – 150	

Reference Intervals Justification

Date of change	Justification
May 2008	A paediatric work group was set-up by Dr Richard Mackay and the results of this workshop have been adopted. Some paediatric reference intervals required differentiation by sex. It was agreed though that there should be one adult range not differentiated by sex (minutes 1 st May 2008)

ALT

Alternative name: Alanine Aminotransferase

Test / Analyte Information

Health Pac Number	BZ8	LOINC Code	1742-6
Reported to (no DP)	0	Units	U/L
Paed Range Needed	No	Sample Type	Ser /Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	IFCC recom Bergmeyer
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	IFCC (without pyridoxal PO4)
MLS Analyser	Roche P Module	MLS Method	IFCC (without pyridoxal PO4)
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	IFCC (without pyridoxal PO4)
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	IFCC (without pyridoxal PO4)
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval	
	Female	Male
All Ages (Adult)	0 – 30	0 – 40

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges only but differentiated by sex)

Amylase

Alternative name: Total Amylase

Test / Analyte Information

Health Pac Number	BZ1	LOINC Code	1798-8
Reported to (no DP)	0	Units	U/L
Paed Range Needed	No	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Enzymatic,G7-PNP
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	G7 PNP
MLS Analyser	Roche P Module	MLS Method	G7-PNP
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	G7-PNP
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	G7-PNP
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	< 100

Reference Intervals Justification

Date of change	Justification
September 2008	Conception / Agreement (Single ranges only)
June 2009	Analyte reference intervals required changing by CHL, agreed by Taranaki.

Amylase/creat urine

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BZ1	LOINC Code	34235-2
Reported to (no DP)	0	Units	Ratio
Paed Range Needed	No	Sample Type	Ur

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Enzymatic,G7-PNP
SCL Analyser	Not performed	SCL Method	Not performed
MLS Analyser	Roche P Module	MLS Method	G7-PNP
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	G7-PNP
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	G7-PNP
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	< 35

Reference Intervals Justification

Date of change	Justification
September 2008	Conception / Agreement (Single ranges only)
June 2009	Analyte reference intervals required changing by CHL, agreed by Taranaki.

AST

Alternative name: Aspartate Aminotransferase

Test / Analyte Information

Health Pac Number	BZ2	LOINC Code	1920-8
Reported to (no DP)	0	Units	U/L
Paed Range Needed	Yes	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	IFCC recomm, Bergmeyer et al
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	IFCC (without pyridoxal PO4)
MLS Analyser	Roche P Module	MLS Method	IFCC (without pyridoxal PO4)
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	IFCC (without pyridoxal PO4)
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	IFCC (without pyridoxal PO4)
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
< 1 month	20 – 200
1 month – 1 year	20 – 80
2 years – 5 years	15 – 60
> 5 + (Adult)	10 – 50

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges for paediatric tests and adults)
August 2008	A paediatric work group was set-up by Dr Richard Mackay and the results of this workshop have been adopted.

Bilirubin

Alternative name: Total Bilirubin

Test / Analyte Information

Health Pac Number	BV1	LOINC Code	14631-6
Reported to (no DP)	0	Units	umol/L
Paed Range Needed	Yes	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	In-house Jendrassik & Grof
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	DPD
MLS Analyser	Roche P Module	MLS Method	DPD
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	DPD
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Diazonium salt
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval	Comments
Cord Blood (For specimens same day as dob)	< 50	
24hours (For specimens taken day after dob)	< 100	Consider Investigation and treatment for bilirubin over 100
48hours (For specimens taken 2 days after dob)	< 140	Consider Investigation and treatment for bilirubin over 250
3 days (For specimens taken 3 days after dob)	< 200	Consider Investigation and treatment for bilirubin over 300
4-14 days (For specimens taken 4-14 days after dob)	< 170	Consider Investigation and treatment for bilirubin over 340
>2 weeks (For specimens taken 2-6 weeks after dob)	3 – 23	Consider investigation for prolonged jaundice for bilirubin over 150
>6 weeks + (Adult)	2 – 20	

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges only) – paediatric to be referred to a workgroup.
August 2008	A paediatric work group was set-up by Dr Richard Mackay and the results of this workshop have been adopted. Some paediatric reference intervals required differentiation by sex. It was agreed though that there should be one adult range not differentiated by sex (minutes 1 st May 2008)
June 2009	Analyte reference intervals required changing by CHL, agreed by Taranaki.

Bilirubin (conj)

Alternative name/s: Conjugated Bilirubin / Direct Bilirubin

Test / Analyte Information

Health Pac Number	BV2 ??	LOINC Code	14629-0
Reported to (no DP)	0	Units	umol/L
Paed Range Needed	No	Sample Type	Ser / plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	In-house J&G
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	J-G
MLS Analyser	Roche P Module	MLS Method	J-G
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	J-G
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Diazo
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	0 – 5

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges only)

Calcium

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BE8	LOINC Code	2000-8
Reported to (no DP)	1	Units	mmol/L
Paed Range Needed	No	Sample Type	Ser /Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Arsenazo dye
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	CPC
MLS Analyser	Roche P Module	MLS Method	CPC
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	CPC
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Arsenazo dye
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	2.2 – 2.6

Reference Intervals Justification

Date of change	Justification
May 2008	Adult range agreed.

Chloride

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BE4	LOINC Code	2075-0
Reported to (no DP)	0	Units	mmol/L
Paed Range Needed	No	Sample Type	Ser /Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	ISE electrode
SCL Analyser	Not performed	SCL Method	Not performed
MLS Analyser	Roche ISE	MLS Method	ISE
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	ISE
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Indirect ISE
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	95 –110

Reference Intervals Justification

Date of change	Justification
November 2008	Adult range agreed.
June 2009	Analyte reference intervals required changing by CHL, agreed by Taranaki.

Cholesterol

Alternative name: Total Cholesterol

Test / Analyte Information

Health Pac Number	BL1	LOINC Code	14647-2
Reported to (no DP)	1	Units	mmol/L
Paed Range Needed	No	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Enzymes Chol oxidase
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	CHOD
MLS Analyser	Roche P Module	MLS Method	CHOD
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	CHOD
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Enzymes Chol oxidase
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	< 4.0

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges only)
August 2008	Comparability agreed subsequent to comparison testing between CHL, SCL, MLS, Greymouth, Taranaki and Hawke' Bay.

It was agreed that the comments sent out should be reviewed between sites.

Cholesterol (HDL)

Alternative name: HDL Cholesterol

Test / Analyte Information

Health Pac Number	BL4 ??	LOINC Code	14646-4
Reported to (no DP)	2	Units	mmol/L
Paed Range Needed	No	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Accelerator selective detergent
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	Roche Direct 3rd Gen
MLS Analyser	Roche P Module	MLS Method	Roche Direct 3rd Gen
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Roche Direct 3rd Gen
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Accelerator selective detergent
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	> 1.0

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges only)
August 2008	Comparability agreed subsequent to comparison testing between CHL, SCL, MLS, Greymouth, Taranaki and Hawke' Bay.

Cholesterol (LDL) (calculated)

Alternative name: LDL Cholesterol

Test / Analyte Information

Health Pac Number		LOINC Code	39469-2
Reported to (no DP)	1	Units	mmol/L
Paed Range Needed	No	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Calculation
SCL Analyser		SCL Method	Calculation
MLS Analyser		MLS Method	Calculation
WCDHB Analyser		WCDHB Method	Calculation
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Calculation
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	< 2.5

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges only)
August 2008	Comparability agreed subsequent to comparison testing between CHL, SCL, MLS, Greymouth, Taranaki and Hawke' Bay.
June 2009	Email from Angie Quinn (Standards Development Advisor, MoH) notifying SIQAG of LOINC code change – our response “We will note in our documents that the code for Cholesterol, LDL has been updated from XNZ0081 to LOINC 39469-2”

Cholesterol (total/HDL)

Alternative name: Cholesterol / HDL Ratio

Test / Analyte Information

Health Pac Number		LOINC Code	32309-7
Reported to (no DP)	1	Units	NA (Ratio)
Paed Range Needed	No	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser		CHL Method	Calculation
SCL Analyser		SCL Method	Calculation
MLS Analyser		MLS Method	Calculation
WCDHB Analyser		WCDHB Method	Calculation
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Calculation
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	< 4.5

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges only)
August 2008	Comparability agreed subsequent to comparison testing between CHL, SCL, MLS, Greymouth, Taranaki and Hawke' Bay.

Creatinine

Alternative name: (N/A)

Test / Analyte Information

Health Pac Number	BR1	LOINC Code	14682-9
Reported to (no DP)	0	Units	umol/L
Paed Range Needed	Yes (see below)	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Improved Jaffe, kinetic rate
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	Rate blanked, compensated
MLS Analyser	Roche P Module	MLS Method	Rate blanked, compensated
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Rate blanked, compensated
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Improved Jaffe, kinetic rate
HBDHB Analyser		HBDHB Method	

Reference Intervals

Age Range	Reference Interval	
0 days – 30 days	20-60	
1 month – 2 years	20-50	
2 years – 4 years	20-60	
4 years – 6 years	25-65	
6 years – 10 years	25-70	
10 years – 15 years	40-80	
	Female	Male
15 + (Adult)	45-90	50-110

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Adult and Paediatric ranges only)
November 2008	Paediatric age range change from 7-30 days to 0-30days.
July 2009	Age divisions have been tidied up to match ARQAG and the adult reference intervals have been amended. Male was 50-110 amended to 60-105, Female was 40-90 amended to 45-90.
August 2009	New IDMS Creatinine method implemented at CHL – reference data supported slightly amended reference intervals. Female 45-90, Male 50-110. These have been ratified by the CDHB Nephrologists, Dr Geoff Smith (SCL) and Dr Guy Mulligan (MLS).

CRP

Alternative name: C-reactive protein

Test / Analyte Information

Health Pac Number	D21	LOINC Code	1988-5
Reported to (no DP)	0	Units	mg/L
Paed Range Needed	No	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Immunoturbidometric
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	Latex enhanced Immunoturbidometric
MLS Analyser	Roche P Module	MLS Method	Latex enhanced Immunoturbidometric
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Latex enhanced Immunoturbidometric
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Immunoturbidometric
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	< 5

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges only)

Digoxin

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BM1	LOINC Code	14698-5
Reported to (no DP)	1	Units	nmol/L
Paed Range Needed	No	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Turbidometric
SCL Analyser	Centaur	SCL Method	CLIA
MLS Analyser	Roche E170	MLS Method	ECLIA
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	KIMS
TDHB Analyser	Dimension Xpand (Base) Architect (C8000)(Hawera)	TDHB Method	IEMA (Base) Turbidometric (Hawera)
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	0.6 – 2.0

Reference Intervals Justification

Date of change	Justification
September 2008	Conception / Agreement (Single ranges only) – Therapeutic range as opposed to standard reference interval.

Ferritin

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BH1	LOINC Code	2276-4
Reported to (no DP)	0	Units	ug/L
Paed Range Needed	Yes	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	CMIA
SCL Analyser	Roche Cobas 6000 (e601)	SCL Method	ECLIA
MLS Analyser	Roche E170	MLS Method	ECLIA
WCDHB Analyser	Roche Cobas 6000 (e601)	WCDHB Method	ECLIA
TDHB Analyser	Dimension Xpand	TDHB Method	IEMA
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range		Reference Interval	
0 -14 years		15 – 150	
Female		Male	
Age Range	Reference Interval	Age Range	Reference Interval
15 – 49 years	20 – 200	15 – 29 years	20 – 350
> 50 years	20 – 350	> 30 years	20 – 500

Reference Intervals Justification

Date of change	Justification
	It was noted that these ranges were previously agreed prior to the comparability project.

FSH

Alternative name: (Follicle Stimulating Hormone)

Test / Analyte Information

Health Pac Number	BX3	LOINC Code	15067-2
Reported to (no DP)	1	Units	IU/L
Paed Range Needed	Yes	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Beckman Access Machine	CHL Method	ILMA
SCL Analyser	Roche Cobas 6000 (e601)	SCL Method	ECLIA
MLS Analyser	Roche E170	MLS Method	ECLIA
WCDHB Analyser	Roche Cobas 6000 (e601)	WCDHB Method	ECLIA
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	CMIA
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range		Reference Interval	
0 -9 years		0 – 6.5	
>= 10 – 15 years		Prepubertal range 0-6.5 IU/L. Levels rise during puberty towards adult range	
Female (adult)		Male (adult)	
Status	Reference Interval	Status	Reference Interval
Follicular	3 – 10	X	2 – 12
Mid Cycle	4 – 25		
Luteal	2 – 8		
Post Menopause	>20		
Antenatal	<1		

Reference Intervals Justification

Date of change	Justification
November 2008	Comparability agreed subsequent to comparison testing. Agreed to adopt ARQAG reference intervals.
June 2009	Analyte reference intervals required changing by CHL, agreed by Taranaki.

GGT

Alternative name: Gamma Glutamyl transferase

Test / Analyte Information

Health Pac Number	BZ6	LOINC Code	2324-2
Reported to (no DP)	0	Units	U/L
Paed Range Needed	Yes	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Enzyme colourmetric
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	IFCC
MLS Analyser	Roche P Module	MLS Method	IFCC
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	IFCC
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Enzymatic IFCC
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval	
0 – 6 months	< 150	
7 – 12 months	< 50	
1 – 12 years	< 30	
	Female	Male
> 12 + (Adult)	10 – 35	10 – 50

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges for paediatric tests, but adults ranges should be differentiated by sex)
August 2008	A paediatric work group was set-up by Dr Richard Mackay and the results of this workshop have been adopted.

Glucose

Alternative name: Random Glucose

Test / Analyte Information

Health Pac Number	BG5	LOINC Code	14749-6
Reported to (no DP)	1	Units	mmol/L
Paed Range Needed	No	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Enzymatic glucose hexokinase method
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	Enzymatic glucose hexokinase method
MLS Analyser	Roche P Module	MLS Method	Enzymatic glucose hexokinase method
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Enzymatic glucose hexokinase method
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Enzymatic glucose hexokinase method
HBDHB Analyser		HBDHB Method	

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	3.5 – 7.7

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges only)

Glucose (fasting)

Alternative name: (N/A)

Test / Analyte Information

Health Pac Number	BG5	LOINC Code	14771-0
Reported to (no DP)	1	Units	mmol/L
Paed Range Needed	No	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Enzymatic glucose hexokinase method
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	Enzymatic glucose hexokinase method
MLS Analyser	Roche P Module	MLS Method	Enzymatic glucose hexokinase method
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Enzymatic glucose hexokinase method
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Enzymatic glucose hexokinase method
HBDHB Analyser		HBDHB Method	

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	3.5 – 6.0

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges only); 6/11/08 Agreed that CHL will output an appropriate comment between 5.5→6.0 for Hawke's Bay samples.

HbA1c

Alternative name: (Glycated Haemoglobin)

Test / Analyte Information

Health Pac Number	BG2	LOINC Code	4548-4
Reported to (no DP)	1	Units	%
Paed Range Needed	No	Sample Type	Bld

Laboratory Information

CHL Analyser	Biorad Variant II	CHL Method	HPLC
SCL Analyser	Biorad Variant II Turbo	SCL Method	HPLC
MLS Analyser	Biorad Variant II Turbo	MLS Method	HPLC
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Turbidimetric inhibition immunoassay
TDHB Analyser	DCA 2000	TDHB Method	Latex immunoagglutination
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	4.0 – 6.0

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges only)

HbA1c (IFCC)

Alternative name: (Glycated Haemoglobin) – new SI units.

Test / Analyte Information

Health Pac Number	BG2	LOINC Code	XNZ0436
Reported to (no DP)	0	Units	mmol/mol
Paed Range Needed	No	Sample Type	Bld

Laboratory Information

CHL Analyser	Biorad Variant II	CHL Method	HPLC
SCL Analyser	Biorad Variant II Turbo	SCL Method	HPLC
MLS Analyser	Biorad Variant II Turbo	MLS Method	HPLC
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Turbidimetric inhibition immunoassay
TDHB Analyser	DCA 2000	TDHB Method	Latex immunoagglutination
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	20 – 42

Reference Intervals Justification

Date of change	Justification
July 2009	Confirmation from the majority of SIQAG members (CHL, SCL ChCh, MLS Chch, WCDHB) that they are happy to adopt the suggested details for HbA1c reflecting the new requirements. – No negative responses were received.
September 2009	Name changed from HbA1c to HbA1c (IFCC) to allow differentiation between the % and mmol/mol reporting.

Iron

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BH4	LOINC Code	14798-3
Reported to (no DP)	0	Units	umol/L
Paed Range Needed	Yes	Sample Type	Ser /Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Colorimetric complex with Ferene S
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	Ferrozine
MLS Analyser	Roche P Module	MLS Method	Ferrozine
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Ferrozine
TDHB Analyser	Dimension Xpand	TDHB Method	Ferene
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
0 – 2 months	10 – 31
2 months – 1 year	4 – 27
1 – 3 years	5 – 23
3 – 10 years	6 – 25
10 – 18 years	8 – 32
18 + (Adult)	10 – 30

Reference Intervals Justification

Date of change	Justification
August 2008	Adult range agreed. Paediatric range referred to workgroup (06/11/08).
February 2009	A paediatric work group was set-up by Dr Richard Mackay and the results of this workshop have been adopted.
June 2009	Analyte reference intervals required changing by CHL, agreed by Taranaki.

LH

Alternative name: (Luteinising Hormone))

Test / Analyte Information

Health Pac Number	BX4	LOINC Code	10501-5
Reported to (no DP)	1	Units	IU/L
Paed Range Needed	Yes	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Beckman Access Machine	CHL Method	ILMA
SCL Analyser	Roche Cobas 6000 (e601)	SCL Method	ECLIA
MLS Analyser	Roche E170	MLS Method	ECLIA
WCDHB Analyser	Roche Cobas 6000 (e601)	WCDHB Method	ECLIA
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	CMIA
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range		Reference Interval	
0 -9 years		0 – 2.5	
≥ 10 – 15 years		Prepubertal range 0-2.5 IU/L. Levels rise during puberty towards adult range	
Female (adult)		Male (adult)	
Status	Reference Interval	Status	Reference Interval
Follicular	2 – 8	X	2 – 9
Mid Cycle	10 – 75		
Luteal	2 – 8		
Post Menopause	>15		
Antenatal	<1		

Reference Intervals Justification

Date of change	Justification
November 2008	Comparability agreed subsequent to comparison testing. Agreed to adopt ARQAG reference intervals.
June 2009	Analyte reference intervals required changing by CHL, agreed by Taranaki.

Magnesium

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BEB	LOINC Code	2601-3
Reported to (no DP)	1	Units	mmol/L
Paed Range Needed	No	Sample Type	Ser /Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Arsenazo dye
SCL Analyser	Roche P Module	SCL Method	Xylidyl Blue
MLS Analyser	Roche P Module	MLS Method	Xylidyl Blue
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Xylidyl Blue
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Arsenazo dye
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	0.6 – 1.2

Reference Intervals Justification

Date of change	Justification
September 2008	Conception / Agreement (Single ranges only)

Microalbumin urine

Alternative name: (microalbumin urine albumin)

Test / Analyte Information

Health Pac Number	BP7	LOINC Code	14957-5
Reported to (no DP)	0	Units	mg/L
Paed Range Needed	Yes	Sample Type	Ur

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Turbidimetric IA
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	Turbidimetric IA
MLS Analyser	Roche P Module	MLS Method	Tinaquant
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Immunoturbidimetric assay.
TDHB Analyser	Not performed	TDHB Method	Not performed
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
	Currently requiring discussion with the diabetes physicians to find out if differentiation by sex is required. (CF)
All Ages (Adult)	<30

Reference Intervals Justification

Date of change	Justification
April 2008	Adult range agreed.

Oestradiol

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BX5	LOINC Code	14715-7
Reported to (no DP)	0	Units	pmol/L
Paed Range Needed	No	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Diasorin Kit (Manual Method)	CHL Method	RIA
SCL Analyser	Roche Cobas 6000 (e601)	SCL Method	ECLIA
MLS Analyser	Roche E170	MLS Method	ECLIA
WCDHB Analyser	Roche Cobas 6000 (e601)	WCDHB Method	ECLIA
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	CMIA
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range		Reference Interval	
Female (adult)		Male (adult)	
Status	Reference Interval	Status	Reference Interval
Follicular	46 – 600	X	<160
Luteal	160 – 770		
Post Menopause	<200		

Reference Intervals Justification

Date of change	Justification
November 2008	Comparability agreed subsequent to comparison testing. Agreed to adopt ARQAG reference intervals. Only Med Lab South and Southern Community Laboratories will be cumulating Oestradiol – the method used at CHL is NOT comparable.

Phosphate

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BEA	LOINC Code	14879-1
Reported to (no DP)	1	Units	mmol/L
Paed Range Needed	Yes	Sample Type	Ser /Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Molybdate
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	Phosphomolybdate Complex
MLS Analyser	Roche P Module	MLS Method	Molybdate
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Phosphomolybdate Complex
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Phosphomolybdate
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
0 days – 30 days	1.3 – 2.5
31 days – 1 year	1.2 – 2.2
>1 year – 4 years	1.1 – 2.0
>4 years – 11 years	1.0 – 2.0
>11 years – 16 years	0.9 – 1.9
16 + (Adult)	0.8 – 1.5

Reference Intervals Justification

Date of change	Justification
May 2008	Adult range agreed. Paediatric range referred to workgroup (06/11/08).
April 2009	A paediatric work group was set-up by Dr Richard Mackay and the results of this workshop have been adopted.

Potassium

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BE2 (BE3)	LOINC Code	2823-3
Reported to (no DP)	1	Units	mmol/L
Paed Range Needed	No	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Indirect ion specific electrode
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	ISE
MLS Analyser	Roche ISE	MLS Method	ISE
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	ISE
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Indirect ion specific electrode
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	3.5 – 5.2

Reference Intervals Justification

Date of change	Justification
November 2008	Conception / Agreement (Single ranges only) – Extended discussion was had over plasma vs serum. Negated by raising the upper limit from 5.0 → 5.2.

Progesterone

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BX1	LOINC Code	14890-8
Reported to (no DP)	0	Units	nmol/L
Paed Range Needed	No	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser		CHL Method	Inhouse Elisa method for this assay. Ref: An Enzyme-linked immunosorbent assay (ELISA) for plasma progesterone: immobilised antigen approach. P.A.Elder, K.H.J.Yeo, J.G.Lewis and J.K.Clifford Clinica Chimica Acta. 162 (1987) 199-206.
SCL Analyser	Roche Cobas 6000 (e601)	SCL Method	ECLIA
MLS Analyser	Roche E170	MLS Method	ECLIA
WCDHB Analyser	Roche Cobas 6000 (e601)	WCDHB Method	ECLIA
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	CMIA
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Female (adult)		Male (adult)	
Status	Reference Interval	Status	Reference Interval
Follicular	1 – 4	X	0 – 1
Luteal	15 – 100		
Post Menopause	<4		

Reference Intervals Justification

Date of change	Justification
November 2008	Comparability agreed subsequent to comparison testing. Agreed to adopt ARQAG reference intervals.

Prolactin

Alternative name: (PRL)

Test / Analyte Information

Health Pac Number	BX7	LOINC Code	15081-3
Reported to (no DP)	0	Units	mIU/L
Paed Range Needed	No	Sample Type	Ser /Plas

Laboratory Information

CHL Analyser	Beckman Access Machine	CHL Method	ILMA
SCL Analyser	Roche Cobas 6000 (e601)	SCL Method	ECLIA
MLS Analyser	Roche E170	MLS Method	ECLIA
WCDHB Analyser	Roche Cobas 6000 (e601)	WCDHB Method	ECLIA
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	CMIA
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval	
	Female	Male
All Ages (Adult)	50 – 550	50 – 350

Reference Intervals Justification

Date of change	Justification
November 2008	Comparability agreed subsequent to comparison testing. Agreed to adopt ARQAG reference intervals.
June 2009	As a result of the endocrinologists plus Guy Mulligan and Geoff Smith meeting yesterday, we are now all agreed that the prolactin reference intervals should be: Male: 50 – 350 mIU/L; Female: 50 - 550 mIU/L.

Protein

Alternative name: (Total Protein)

Test / Analyte Information

Health Pac Number	BP1	LOINC Code	2885-2
Reported to (no DP)	0	Units	g/L
Paed Range Needed	Yes	Sample Type	Ser /Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Biuret
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	Biuret
MLS Analyser	Roche P Module	MLS Method	Biuret
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Biuret
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Biuret
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
0 – 60 days	45 – 70
61 days – 12 months	50 – 80
>12 months – 6 years	55 – 80
>6 years – 11 years	60 – 83
>11 + (Adult)	64 – 83

Reference Intervals Justification

Date of change	Justification
April 2008	Adult range agreed. Paediatric range referred to workgroup (06/11/08).
February 2009	A paediatric work group was set-up by Dr Richard Mackay and the results of this workshop have been adopted.

Sodium

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BE1(BE3)	LOINC Code	2951-2
Reported to (no DP)	0	Units	mmol/L
Paed Range Needed	No	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Indirect ion specific electrode
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	ISE
MLS Analyser	Roche ISE	MLS Method	ISE
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	ISE
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Indirect ion specific electrode
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	135 – 145

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges only)
June 2009	Analyte reference intervals required changing by CHL, agreed by Taranaki.

T3 (free)

Alternative name: (Tri-iodothyronine)

Test / Analyte Information

Health Pac Number	BT3	LOINC Code	14928-6
Reported to (no DP)	1	Units	pmol/L
Paed Range Needed	Yes	Sample Type	Ser /Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	CMIA
SCL Analyser	Roche Cobas 6000 (e601)	SCL Method	ECLIA
MLS Analyser	Roche E170	MLS Method	ECLIA
WCDHB Analyser	Roche Cobas 6000 (e601)	WCDHB Method	ECLIA
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	CMIA
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
<12 months	4.5 – 10.5
1 – 12 years	3.8 – 8.6
12 – 18 years	3.7 – 7.7
18 + (Adult)	2.5 – 6.0

Reference Intervals Justification

Date of change	Justification
November 2008	Adult range agreed. Paediatric range referred to workgroup (06/11/08).
February 2009	A paediatric work group was set-up by Dr Richard Mackay and the results of this workshop have been adopted.

T4 (free)

Alternative name: (Thyroxine)

From LOINC also "Free thyroxine index or free T4"

Test / Analyte Information

Health Pac Number	BT2	LOINC Code	14920-3
Reported to (no DP)	0	Units	pmol/L
Paed Range Needed	Yes	Sample Type	Ser /Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	CMIA
SCL Analyser	Roche Cobas 6000 (e601)	SCL Method	ECLIA
MLS Analyser	Roche E170	MLS Method	ECLIA
WCDHB Analyser	Roche Cobas 6000 (e601)	WCDHB Method	ECLIA
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	CMIA
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
< 6 days	17 – 42
1 week – 1 year	14 – 23
1 + (Adult)	10 – 24

Reference Intervals Justification

Date of change	Justification
November 2008	Adult range agreed. Paediatric range referred to workgroup (06/11/08).
February 2009	A paediatric work group was set-up by Dr Richard Mackay and the results of this workshop have been adopted.

Transferrin

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BH2	LOINC Code	3034-6
Reported to (no DP)	1	Units	g/L
Paed Range Needed	Yes	Sample Type	Ser /Plas

Laboratory Information

CHL Analyser	Abbott Architect c8000/i2000	CHL Method	Immunoturbidimetric
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	Immunoturbidimetric
MLS Analyser	Roche P Module	MLS Method	Immunoturbidimetric
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Immunoturbidimetric
TDHB Analyser	Dimension Xpand	TDHB Method	Immunoturbidimetric
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
0 – 2 months	1.3 – 2.3
2 months – 3 years	1.6 – 3.3
3 + (Adult)	2.0 – 3.5

Reference Intervals Justification

Date of change	Justification
November 2008	Adult range agreed. Paediatric range referred to workgroup (06/11/08). This test will be used at the three laboratories instead of TIBC.
February 2009	A paediatric work group was set-up by Dr Richard Mackay and the results of this workshop have been adopted.

Triglycerides

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BL3	LOINC Code	14927-8
Reported to (no DP)	1	Units	mmol/L
Paed Range Needed	No	Sample Type	Ser / Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Enzymatic hydrolysis of trig
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	GPO
MLS Analyser	Roche P Module	MLS Method	GPO
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	GPO
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	GPO
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
All Ages (Adult)	< 1.7

Reference Intervals Justification

Date of change	Justification
April 2008	Conception / Agreement (Single ranges only)
August 2008	Comparability agreed subsequent to comparison testing between CHL, SCL, MLS, Greymouth, Taranaki and Hawke' Bay.

TSH

Alternative name: (Thyroid Stimulating Hormone)

Test / Analyte Information

Health Pac Number	BT1	LOINC Code	3016-3
Reported to (no DP)	2	Units	mIU/L
Paed Range Needed	Yes	Sample Type	Ser /Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	CMIA
SCL Analyser	Roche Cobas 6000 (e601)	SCL Method	ECLIA
MLS Analyser	Roche E170	MLS Method	ECLIA
WCDHB Analyser	Roche Cobas 6000 (e601)	WCDHB Method	ECLIA
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	CMIA
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
1 – 4 days	1 – 20
5 – 30 days	0.7 – 16
31 days – 6 months	0.5 – 6
> 6 mnths + (Adult)	0.40 – 4.00

Reference Intervals Justification

Date of change	Justification
August 2008	Comparability agreed subsequent to comparison testing between CHL, SCL, MLS, Greymouth, Taranaki and Hawke' Bay. A paediatric work group was set-up by Dr Richard Mackay and the results of this workshop have been adopted.

Urate

Alternative name: (Uric Acid)

Test / Analyte Information

Health Pac Number	BR3	LOINC Code	14933-6
Reported to (no DP)	2	Units	mmol/L
Paed Range Needed	Yes	Sample Type	Ser /Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Modified Trinder
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	Uricase
MLS Analyser	Roche P Module	MLS Method	Uricase
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Uricase
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Uricase
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval	
0 – 11 years	0.08 – 0.34	
	Female	Male
12 + (Adult)	0.15 – 0.36	0.20 – 0.42

Reference Intervals Justification

Date of change	Justification
May 2008	Adult range agreed. Paediatric range referred to workgroup (06/11/08).
February 2009	A paediatric work group was set-up by Dr Richard Mackay and the results of this workshop have been adopted.

Urea

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	BR2	LOINC Code	22664-7
Reported to (no DP)	1	Units	mmol/L
Paed Range Needed	Yes	Sample Type	Ser /Plas

Laboratory Information

CHL Analyser	Architect (C8000, i2000)	CHL Method	Enzymatic kinetic
SCL Analyser	Roche Cobas 6000 (c501)	SCL Method	Urease
MLS Analyser	Roche P Module	MLS Method	Urease
WCDHB Analyser	Roche Cobas 6000 (c501)	WCDHB Method	Urease
TDHB Analyser	Architect (C8000, i2000)	TDHB Method	Urease
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval
1 day – 30 days	1.1 – 6.1
1 month – 1 year	0.7 – 5.0
2 years – 3 years	1.1 – 5.0
4 years – 6 years	1.1 – 5.7
7 years – 9 years	1.4 – 5.7
10 years – 12 years	1.8 – 6.4
13 + (Adult)	3.2 – 7.7

Reference Intervals Justification

Date of change	Justification
May 2008	Adult range agreed. Paediatric range referred to workgroup (06/11/08).
April 2009	A paediatric work group was set-up by Dr Richard Mackay and the results of this workshop have been adopted.
June 2009	Analyte reference intervals required changing by CHL, agreed by Taranaki.

Appendix A: Tests unable to cumulateTest / Analyte Information

Test / Analyte	Decimal Places	Units	LOINC Code
Red Cell Folate		nmol/ L	
Protein Electrophoretic pattern			
Faecal occult blood, human haemoglobin specific			
Lipoproteins, electrophoresis, serum			
Glucose Tolerance test post-polycose		mmol/L	
Glucose Tolerance test standard		mmol/L	

Appendix B: {TEST ENTRY: LOINC Name}

Alternative name: (NA)

Test / Analyte Information

Health Pac Number	{health pac no}	LOINC Code	{LOINC Code}
Reported to (no DP)	{DP}	Units	{units}
Paed Range Needed	{yes or no}	Sample Type	{sample type}

Laboratory Information

CHL Analyser		CHL Method	X
SCL Analyser		SCL Method	X
MLS Analyser		MLS Method	X
WCDHB Analyser		WCDHB Method	X
TDHB Analyser		TDHB Method	X
HBDHB Analyser		HBDHB Method	X

Reference Intervals

Age Range	Reference Interval	
Adult	> 1.0	
Antenatal 1 st Trimester	-	X
Antenatal 2 nd Trimester	-	X
Antenatal 3 rd Trimester	-	X

Reference Intervals Justification

Date of change	Justification

Change History:

Date of Change	Analyte	Version	Change History
25/06/2009	Cholesterol (LDL) (calculated)	1.0	Email from Angie Quinn (Standards Development Advisor, MoH) notifying SIQAG of LOINC code change – our response “We will note in our documents that the code for Cholesterol, LDL has been updated from XNZ0081 to LOINC 39469-2”
25/06/2009	HbA1C	1.0	Additional HbA1c analyte entry added to the SIQAG documentation reflecting the requirement to report mmol/mol. a) Email from Angie Quinn (Standards Development Advisor, MoH) notifying us of the new NZ LOINC code – our response “We will note in our documents that the new code for HbA1c (mmol/mol) is XNZ0436.” b) Confirmation from the majority of SIQAG members (CHL, SCL ChCh, MLS Chch, WCDHB) that they are happy to adopt the suggested details for HbA1c reflecting the new requirements. – No negative responses were received.
25/06/2009	Prolactin	1.0	Email from John Livesey: - As a result of the endocrinologists plus Guy Mulligan and Geoff Smith meeting yesterday, we are now all agreed that the prolactin reference intervals should be: Male: 50 – 350 mIU/L; Female: 50 - 550 mIU/L.
24/07/2009		1.1	Labcare Taranaki included their Analysers and Methods.
05/08/2009		1.1	Updated SCL Analyser and Method list as provided by Geoff Smith.
05/08/2009	Creatinine	1.1	Age divisions have been tidied up to match ARQAG and the adult reference intervals have been amended. Male was 50-110 amended to 60-105, Female was 40-90 amended to 45-90.
10/09/2009	HbA1c	1.2	The name for HbA1c reporting mmol/mol has been amended to HbA1c (IFCC) to allow differentiation between the % and mmol/mol reporting.
15/09/2009	Creatinine	1.2	New IDMS Creatinine method implemented at CHL – reference data supported slightly amended reference intervals. Female 45-90, Male 50-110. These have been ratified by the CDHB Nephrologists, Dr Geoff Smith (SCL) and Dr Guy Mulligan (MLS).
14/01/2010	Introduction	1.3	Minor amendment to the introduction, updated SCL Analyser and Method list as provided by Geoff Smith.