

# Corporate Services

## Planning and Funding



### Hawke's Bay DHB Funded Community Laboratory Tests

Dear Community Referrer

The following is to provide guidance on community laboratory tests the Hawke's Bay DHB will fund. These change from time to time, based on Clinical Council Laboratory Advisory Group endorsement.

#### General Tests:

Approved Practitioners have access to funded laboratory diagnostic tests listed in **Appendix A** according to the DHB Shared Services Laboratory Test Schedule.

#### Amendments:

Following approval by the Clinical Council Laboratory Advisory Group the following amendments have been made:

Date	Test	Details
25 January 2012	Vitamin D testing	Vitamin D testing will only be funded when: <ul style="list-style-type: none"> <li>ordered by <ul style="list-style-type: none"> <li>Endocrinologist</li> <li>Gastroenterologist</li> </ul> </li> <li>For a patient <ul style="list-style-type: none"> <li>At high risk of bone disease</li> <li>With suspected metabolic bone disease</li> <li>After discussion and approval by Chemical Pathologist</li> </ul> </li> </ul> See <b>Appendix B</b>
3 March 2014	Occult Blood Testing	No longer available as a publically funded laboratory test See <b>Appendix C</b>
3 March 2014	Liver Function Profile tests	GGT and total protein will not be included automatically in LFT profile but can be still requested individually. See <b>Appendix C</b>
23 February 2015	Faecal Calprotectin (FCP)	<del>Restricted to either specialist or with specialist approval. See Appendix D for details.</del> UPDATED IN DECEMBER 2020 – SEE <b>Appendix K</b>
5 October 2015	Copper Zinc Selenium	Restricted to either specialist or by pre-authorisation by a specialist: <ul style="list-style-type: none"> <li>Gastroenterologist</li> <li>GI Surgeon</li> <li>Neurologist</li> <li>Approved workplace scheme</li> <li>Chemical pathologist</li> </ul> See <b>Appendix E</b>
5 October 2015	C-Peptide	Restricted to either a specialist or pre-authorisation by a specialist: <ul style="list-style-type: none"> <li>Endocrinologist</li> <li>Chemical pathologist</li> </ul> See <b>Appendix E</b>

2018	Bordetella Pertussis	Demand management rules in place, see <b>Appendix F</b> . Consult PHU or Clinical Microbiologist if patient doesn't fit the listed criteria
2019	Amylase change to Lipase	Lipase is test of choice for acute pancreatitis – see <b>Appendix G</b>
	H. pylori	In Hawke's Bay the recommended test for H. pylori is stool antigen; note requires stopping PPI two weeks prior to testing. See <b>Appendix H</b>
	Homocysteine	As of 1 July this test is no longer funded unless authorised by a Chemical Pathologist working at HBDHB or SCL and this is written on the laboratory test request form. See <b>Appendix I</b>
1 September 2020	ACTH	Specialist approval required See <b>Appendix J</b>
	Growth Hormone	Specialist approval required See <b>Appendix J</b>
	HSV Type Specific Antibodies	Clinical microbiologist approval required See <b>Appendix J</b>
	Insulin-Like Growth Factor	Specialist approval required See <b>Appendix J</b>
	Jak2 Val617phe	Specialist or approved on Health Pathway See <b>Appendix J</b>
	Thiopurine Methyl Gene Analysis	Specialist approval required See <b>Appendix J</b>
	Urine Magnesium (Timed)	Specialist approval required See <b>Appendix J</b>
December 2020	Faecal Calprotectin (FCP)	Clinical information required See <b>Appendix K</b>

Clinical Guidance has also been provided including:

1. Histology specimen guidance
2. Hawke's Bay DHB test guidelines (hospital) available: <http://med.co.nz/HBLab>

## HBDHB Contract definition of approved practitioner

**Approved Practitioner** means the type of health practitioner, as defined in clause H4, whom we have approved to send samples to you for analysis for specific Laboratory Tests (appendix 1). Each Laboratory Test may be referred by a different type of health practitioner, whom we have approved to refer the test.

H4.2 An Approved Practitioner is any vocationally registered primary care practitioner or any registered practitioner supervised by a primary care practitioner lawfully entitled to request diagnostic tests and services for a community patient. Primary care practitioners includes vocationally and generally registered general practitioners.

H4.3 Approved Practitioners also include:

- a) a certified cervical smear taker, but only for the tests indicated in the Tier One List, Laboratory Test Schedule (2013) in Appendix 6
- b) a person who is registered as a midwife with the Midwifery Council of New Zealand, but only for the tests indicated in the Tier One Test List;
- c) a person who is registered as an independent nurse practitioner with the Nursing Council of New Zealand, and approved by the Nursing Council of New Zealand to authorise the provision of laboratory diagnostic services, but only for tests indicated in the Tier One Test List;
- d) a person who is registered as a nurse with the Nursing Council of New Zealand, and working for a Primary Health Organisation under appropriate supervision and acting in accordance

with appropriate protocols, but only for the tests indicated in the Tier One Test List.

## Appendix A

# COMMUNITY LABORATORY SERVICES

### Appendix 1: COMMUNITY LABORATORY TESTS

Schedule	Description		
APC	APC RESISTANCE	BL4	FASTING LIPID GROUP TEST
BA1	CORTISOL, SERUM	BL5	LIPOPROTEINS, EPP
BA2	CORTISOL,(STIM/SUPP TEST	BM1	DIGOXIN
BA3	CATECHOLAMINES, 24HR URIN	BM2	LITHIUM
BA4	VANILYMANDELIC ACID 24U	BM3	ANTIEPILEPTICS
BA5	URINE FREE CORTISOL	BM4	THEOPHYLLINE
BE1	SODIUM, SERUM	BP1	PROTEINS TOTAL, SERUM
BE2	POTASSIUM, SERUM	BP2	ALBUMIN
BE3	SODIUM & POTASSIUM, SERUM	BP3	PROTEIN EPP, SERUM
BE4	CHLORIDE, SERUM	BP4	EPP CONCENTRATED URINE
BE5	SODIUM, 24 URINE	BP5	IMMUNOGLOBULIN(IGA/E/G/M
BE6	Potassium, 24 hr urine	BP6	IMM FOR B.JONES PROTEIN
BE7	SODIUM & POTASSIUM 24U	BP7	PROTEINS 24HR URINE
BE8	CALCIUM, SERUM	BP8	MICROALBUMIN, MORNING URN
BE9	CALCIUM, 24HR URINE	BR1	CREATININE SERUM
BEA	PHOSPHATE, SERUM	BR2	UREA, SERUM
BEB	MAGNESIUM, SERUM	BR3	URATE OR URIC ACID,SERUM
BEC	MAGNESIUM, URINE	BR8	CREATININE, 24 HR URINE
BF1	FAECAL OCCULT BLOOD	BR9	CREATININE CLEARANCE TST
BF5	Faecal reducing substances	BS1	BICARBONATE OR CO2
BG1	FRUCTOSAMINE	BS2	Ph, pO2 and P aO2
BG2	GLYCOSYL PROTEIN	BT1	THYROID STIMULATING HORM
BG3	GTT STANDARD	BT2	FREE THYROID IDX/FREE T4
BG4	GTT POST-POLYCOSE SCREEN	BT3	SERUM FREE T3
BG5	GLUCOSE, SERUM	BU1	HYDROXY-INDOLEACETIC ACID
BH1	FERRITIN	BU2	TROPONIN
BH2	TRANSFERRIN, SERUM	BV1	BILIRUBIN TOTAL, SERUM
BH3	IRON BINDING CAPACITY	BV2	BILIRUBIN TOT, CONJ, UNCONJ
BH4	IRON, SERUM	BV4	ALCOHOL DIAGNOSTIC ONLY
BH7	FOLATE,RED CELL		
BH8	FOLATE PLUS VIT B12,SERUM	BV9	LIVER FUNCTION SCREEN
	Vitamen B12	BX1	PROGESTERONE, SERUM
BL1	CHOLESTEROL	BX2	HCG SCREEN,& QUANAT HCG
BL3	TRIGLYCERIDE,FASTING ONLY	BX3	FOLLICLE STIM HORMONE FSH
		BX4	LUTEINISING HORMONE
		BX5	OESTRADIOL, SERUM
		BX7	PROLACTIN SERUM
		BX8	Testosterone, serum
		BZ1	AMYLASE
		BZ2	AST, SERUM
		BZ3	CK, SERUM

BZ5	ALKALINE PHOSPHATASE	D42	HEPATITIS B (ANTI HBS) AB
BZ6	GGT	D43	HEPATITIS (HBSAG) ANTIGEN
BZ8	ALT	D44	HEPATITIS B (ANTI HBC)
BZ9	OTHER REQUESTED ENZYMES	D45	HEPATITIS B (HBE) ANTIG.
C20	CYTO EXAM NON - GYNAE	D46	HEPATITIS A IGM ANTIBODY
C40	CYTO EXAM - FNA	D47	HEPATITIS A IGG ANTIBODY
C50	HISTOLOGY	D48	HEPATITIS C ANTIBODY
C51	IMMUNOCHEMISTRY, 1ST STAIN	D60	CM VIRUS SPECIFIC AB PAIR
C52	IMMUNOCHEMISTRY, SUB. STAIN	D61	EPSTEIN-BARR VIRUS IGM
C53	IMMUNOCYTOCHEMISTRY, 1ST S	D62	EPSTEIN-BARR VIRUS IGG
C54	IMMUNOCYTOCHEMISTRY, SUB S	D70	CHLAMYDIA LCR/PCR
D01	SKIN TESTS IMM HYPERSENS	D71	ROTAVIRUS DIRECT ANTIGEN
D12	Tuberculin skin test	D72	HERPES DIRECT AG TEST
D15	ANTI NUCLEAR ANTIBODY	D73	GIARDIA DIRECT ANTIGEN
D16	ANTI-NUCLEAR AB TITRE	D80	HIV SCREEN TEST
D17	THYROID ANTIBODIES	D90	PSA
D19	AUTOANTIBODIES, OTHER	DNA	DNA COLLECTION
D20	R/F - ROSE WAALER TEST	H01	ESR
D21	C-REACTIVE PROTEIN	H04	Thrombin time
D22	ANTISTREP ANTIBODIES	H06	PLASMA PROTHROMBIN RATIO
D23	PAUL-BUNNELL	H07	PARTIAL THROMBOPLASTIN TM
D24	SYPHILIS - VDRL ETC	H09	FIBRINOGEN (QUANTITATIVE)
D25	SYPHILIS SPECIFIC AB TEST	H10	COAGULATION FACTORS INDIV
D31	Hydatids antibody	H15	COAGULATION SCREEN
D32	Leptospira agglutination screen	H16	COAG PROFILE (GROUP 2)
D34	BRUCELLA ANTIBODIES	H19	RED BLOOD CELL INCLUSIONS
D35	TOXOPLASMA ABS PAIRED SER	H20	AHG - COOMBS TEST
D36	TOXOPLASMA ABS IGM TITRE	H33	RBC/WBC ENZYMES
D40	RUBELLA ABS IMMUNE STATUS	H40	HAEMOGLOBIN PIGMENTS QUAL
D41	RUBELLA ABS TITRE PAIRED	H41	HAEMOGLOBIN PIGMENTS QUAN

H50	Bone marrow aspirate
H60	ABO GROUP
H63	RHESUS PHENOTYPING
H64	BLOOD GROUP
LIP	LIPASE
M01	SWAB SKIN/WOUND/PUS
M02	SWAB THROAT
M03	SWAB EAR
M04	SWAB NASAL
M05	SWAB PERIANAL
M06	SWAB VAGINAL
M07	SWAB CERVICAL
M08	SWAB URETHRAL
M09	SWAB EYE
M10	SWAB RECTAL FOR STD
M11	ENTERIC PATHOGENS
M15	OVA AND CYSTS
M16	ASPIRATES CULT & SENS
M17	BLOOD CULTURE
M18	SPUTUM EXCLUDING TB
M19	OTHER CULTURE SENS * ID
M20	MYCOLOGY - SKIN
M21	FILM-MALARIA/FILARIA/GC
M22	FILM (CONC) FOR FILARIA
M25	SEMINAL FLUID - FERTILITY
M26	SEMINAL FLUID POST VAS
M30	TB - sputum
M40	URINE CULTURE ETC
N01	CERVICAL CYTOLOGY
N02	CERVICAL HISTOLOGY
PLS	PLASMINOGEN
PRC	PROTEIN C
PRS	PROTEIN S
S01	COMPLETE BLOOD COUNT
S02	FIRST ANTENATAL SCREENING
S03	ANTENATAL SUBSEQUENT SCR
S04	ANTENATAL ABS INCL COOMBS
	<b>Total</b>

## HISTOLOGY

Site	Specimen Type	Request
Specific organ, site, side	Shave biopsy	Routine surgical pathology processing (plus IHC if indicated)
	Punch biopsy	
	Cell block from FNA specimen	Sites with special requirements <ul style="list-style-type: none"> <li>- renal (routine IF, EM)</li> <li>- bone (for metabolic disease)</li> <li>- muscle (routine, enzyme histochemistry, EM)</li> <li>- nerve (routine, special techniques, EM)</li> <li>- other(specify)</li> </ul>
	Frozen section	
	Incisional biopsy	
	Excision biopsy	
	Wide local excision	
	Partial organectomy +/- LN (Give specific description)	Immunohistochemistry Studies (e.g. for ER, PR, cerbB-2 in breast carcinoma)
	Complete organectomy +/- LN (Give specific description)	Immunofluorescence Studies (e.g. skin for Inflammatory dermatitis)
		EM Studies (e.g. CADISIL)
		Cancer Mutational Testing (e.g. EGFR, BRAF)
		Second Opinion Referral
		Multi-Disciplinary Meeting Presentation
		Return of Specimen to patient

## APPENDIX 6: LABORATORY TEST SCHEDULE 2013 (DHB Shared Services)

HBDHB has adopted the Laboratory Test Schedule 2013 as developed by an expert Steering Committee and Advisory Groups. Guidelines have been developed to support the schedule and can be readily accessed by Referrers.

### Notes

The HBDHB Laboratory Committee has and may in the future provide local rules on the appropriateness of these tests. For example vitamin D and Occult Blood testing have local restrictions on access to testing.

### Definitions

**Tier One Test** – Only approved medical practitioners with a current practising certificate in New Zealand may order a Tier One Test.

**Tier Two Test** - A Tier Two test is a specialist test. Guidance the appropriate referrer is provided for a number of Tier Two tests.

## CHEMICAL PATHOLOGY TESTS

### NOTES:

<b>Tier One Test</b>	Refer to the Definitions
<b>Tier Two Test</b>	Refer to the Definitions

## Occupational Health / Travel / Sport / Visa / Insurance Screening Tests

Screening tests in the following categories are *not funded*:

- for travel or occupational health
- providing information for insurance or visa applications
- testing required by some sports groups
- for testing pre or post vaccination

Tier 2 tests in this category do not require authorisation if the clinician ordering the test does not have the appropriate vocational registration or credentialing.

TESTS NOT FUNDED	Tier One Test	Tier Two Test	Comment
CA 72-4	N/A	N/A	GUIDELINE Not funded
Faecal fat	N/A	N/A	Not funded
RBC magnesium	N/A	N/A	GUIDELINE Not funded
Salivary progesterone	N/A	N/A	GUIDELINE Not funded
Salivary testosterone	N/A	N/A	GUIDELINE Not funded

Test	Tier One Test	Tier Two Test	Comment
11Deoxycortisol		Yes	
17-OH progesterone		Yes	
5HIAA urine	Yes		
5HIAA urine 24hr	Yes		
6 thioguanine nucleotides		Yes	
A-1 antichymotrypsin		Yes	
A-1 antitrypsin studies	Yes		
A-1 glycoprotein		Yes	
AASA - alpha-amino adipic semialdehyde dehydrogenase deficiency		Yes	
Acetone		Yes	
Acetylase status		Yes	
Acid maltase		Yes	

Test	Tier One Test	Tier Two Test	Comment
Acid phosphatase		Yes	
Acid phosphatase (prostatic)		Yes	
Acyl carnitine profile		Yes	
ACTH	Yes		
Active B12		Yes	
Adiponectin	Yes		Research only
Ala dehydratase		Yes	
ALA, urine		Yes	
Alanine amino transaminase (ALT)	Yes		
Albumin	Yes		
Albumin, fluid	Yes		
Albumin : creatinine ratio	Yes		
Aldolase		Yes – Rheumatologist	
Aldosterone (plasma)	Yes		
Alk phosphatase (bone)		Yes	
Alk phosphatase isoenzymes		Yes	
Alkaline methaemoglobin, urine		Yes	
Alkaline phosphatase	Yes		
Alkaline Phosphatase, urine		Yes	
Allopurinol load, urine		Yes	
ALP, fluid	Yes		
ALP, plasma	Yes		
Alpha feto protein	Yes		
Alpha glycoprotein (oroso mucoid)		Yes	
Alpha GST serum		Yes	
Alpha GST, Urine		Yes	
Alpha-subunit (gonadotrophin) free		Yes	

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Telephone (06) 878 8109 extension 4617; Fax 06 878 1374 Email: Di.Vicary@hawkesbaydhb.govt.nz; [www.hawkesbay.health.nz](http://www.hawkesbay.health.nz)  
Corporate Office, Cnr Omaha Road and McLeod Street, Private Bag 9014, Hastings 4156, New Zealand

Test	Tier One Test	Tier Two Test	Comment
Alpha-subunit (gonadotrophin) total		Yes	
ALT, fluid	Yes		
ALT, plasma/serum	Yes		
Aluminium, serum	Yes		
Aluminium, urine	Yes		
Amino Acid, urine	Yes		GUIDELINE
Amino acids, serum	Yes		GUIDELINE
Amino levulinic acid dehydratase, blood		Yes	
Ammonia, plasma		Yes	
Amniotic fluid bilirubin		Yes	
Amniotic fluid screen		Yes	
Amylase	Yes		
Amylase isoenzymes		Yes	Lipase is now the preferred test
Amylase, fluid	Yes		
Amylase, urine	Yes		
Androstenedione		Yes – Endocrinologist – Paediatrician – O&G specialist – Chemical pathologist	GUIDELINE
Angiotensin converting enzyme		Yes	
Angiotensin II		Yes	
Anion gap	Yes		
Anti - TPO	Yes		
Anti Mullerian Hormone	Yes  See comment	Yes	Able to be ordered as part of a publicly-funded Fertility Clinic protocol prior to seeing a specialist
Anti-RNA polymerase III antibodies (RNA polymerase III antibodies)		Yes	
Anti-thyroglobin	Yes		
Antimony, urine		Yes	

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Test	Tier One Test	Tier Two Test	Comment
APO-A1	Yes		GUIDELINE
APO-B	Yes		GUIDELINE
Apolipoprotein E (apoE) genotyping		Yes <ul style="list-style-type: none"> <li>- Specialist lipid clinic</li> <li>- Neurologist</li> <li>- Psychiatrist</li> <li>- Geriatrician</li> <li>- Geneticist</li> <li>- Cardiologist</li> <li>- Chemical pathologist</li> </ul>	GUIDELINE
Arginine vasopressin		Yes	
Arsenic, urine		Yes	
Ascorbate, plasma		Yes	
AST	Yes		
Atrial natriuretic peptide		Yes	
Barium, urine		Yes	
Beta HCG (tumour marker)	Yes		
Beta-2 microglobulin, serum		Yes	
B-Hydroxybutyrate		Yes	
Bicarbonate	Yes		
Bile salts miscellaneous		Yes	
Bile salts, serum		Yes	
Bilirubin	Yes		
Bilirubin (conjugated and unconjugated)	Yes		
Bilirubin (conjugated)	Yes		
Bilirubin (unconjugated)	Yes		
Bismuth, blood		Yes	
Bismuth, urine		Yes	
B-J protein urine	Yes		
B-J protein urine 24hr	Yes		
Blood gases	Yes		
BNP / NT ProBNP	Yes		GUIDELINE

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Test	Tier One Test	Tier Two Test	Comment
Bone markers	Yes		
Boric acid (borate)		Yes	
Bromide, serum		Yes	
C telopeptide	Yes		
C1 inhibitor		Yes	
CA 125	Yes		GUIDELINE
CA 15-3	Yes		GUIDELINE
CA 19-9	Yes		GUIDELINE
Cadmium, blood	Yes		
Cadmium, urine	Yes		
Caffeine	Yes		
Calcitonin		Yes	
Calcium	Yes		
Calcium (ionised)	Yes		
Calcium urine	Yes		
Calcium urine 24hr	Yes		
Carbohydrate chromatography, urine		Yes	
Carbohydrate deficient transferrin (CDT) – (Carbohydrate deficient glycoprotein)		Yes	
Carnitine, free, urine		Yes	
Carnitine, free, plasma		Yes	
Carnitine, total		Yes	
Carnitine, tissue		Yes	
Carotene, serum	Yes		
Catecholamines, urine		Yes	
Catecholamines, urine 24hr		Yes	
CEA / Carcinoembryonic antigen	Yes		GUIDELINE
Ceruloplasmin	Yes		
Chitotriosidase		Yes	

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Test	Tier One Test	Tier Two Test	Comment
Chloramphenicol		Yes	
Chloride	Yes		
Chloride, fluid	Yes		
Chloride, urine	Yes		
Cholestanol, serum		Yes	
Cholesterol	Yes		
Cholesterol (LDL)	Yes		
Cholesterol (total/HDL)	Yes		
Cholesterol, fluid	Yes		
Cholesterol, plasma	Yes		
Cholinesterase phenotype	Yes		
Cholinesterase, plasma	Yes		
Cholinesterase, red cell	Yes		
Chromium, serum	Yes  See comment	Yes  <ul style="list-style-type: none"> <li>– Paediatrician</li> <li>– Haematologist</li> <li>– Dermatologist</li> <li>– Oral Maxillofacial Surgeon / Oral Medicine Specialist</li> <li>– Gastroenterologist</li> <li>– GI surgeon</li> <li>– Neurologist</li> <li>– Orthopaedic surgeon</li> <li>– Anaesthetist / Intensive care medicine specialist</li> <li>– Approved workplace monitoring scheme</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE (Trace Elements)  <u>Metal on metal joint</u> replacements - Able to be ordered by other medical practitioners if this indication is stated on the form.
Chromium, urine		Yes  <ul style="list-style-type: none"> <li>– Paediatrician</li> <li>– Haematologist</li> <li>– Dermatologist</li> <li>– Oral Maxillofacial Surgeon / Oral Medicine Specialist</li> <li>– Gastroenterologist</li> <li>– GI surgeon</li> <li>– Neurologist</li> <li>– Orthopaedic surgeon</li> <li>– Anaesthetist / Intensive care medicine specialist</li> </ul>	GUIDELINE (Trace Elements)

**T e P u n i A r o P u t e a - P l a n n i n g a n d F u n d i n g D i r e c t o r a t e**

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Test	Tier One Test	Tier Two Test	Comment
		<ul style="list-style-type: none"> <li>– Approved workplace monitoring scheme</li> <li>– Chemical pathologist</li> </ul>	
Chromogranin A		Yes	
Citrate, plasma		Yes	
Citrate, urine	Yes		
CO2, blood - total	Yes		
Cobalt, serum	Yes  See comment	Yes  <ul style="list-style-type: none"> <li>– Paediatrician</li> <li>– Haematologist</li> <li>– Dermatologist</li> <li>– Oral Maxillofacial Surgeon / Oral Medicine Specialist</li> <li>– Gastroenterologist</li> <li>– GI surgeon</li> <li>– Neurologist</li> <li>– Orthopaedic surgeon</li> <li>– Anaesthetist / Intensive care medicine specialist</li> <li>– Approved workplace monitoring scheme</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE (Trace Elements)  <u>Metal on metal joint replacements</u> - Able to be ordered by other medical practitioners if this indication is stated on the form.
Cobalt, urine		Yes  <ul style="list-style-type: none"> <li>– Paediatrician</li> <li>– Haematologist</li> <li>– Dermatologist</li> <li>– Oral Maxillofacial Surgeon / Oral Medicine Specialist</li> <li>– Gastroenterologist</li> <li>– GI surgeon</li> <li>– Neurologist</li> <li>– Orthopaedic surgeon</li> <li>– Anaesthetist / Intensive care medicine specialist</li> <li>– Approved workplace monitoring scheme</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE (Trace Elements)
Coenzyme Q10 (CoQ10), plasma		Yes  <ul style="list-style-type: none"> <li>– Cardiologist</li> <li>– Neurologist</li> <li>– Paediatrician</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE
Collagen		Yes	
Complement levels - C3 & C4	Yes		
Copper, plasma	Yes	Yes	GUIDELINE

Test	Tier One Test	Tier Two Test	Comment
	See comment	<ul style="list-style-type: none"> <li>– Paediatrician</li> <li>– Haematologist</li> <li>– Dermatologist</li> <li>– Oral Maxillofacial Surgeon / Oral Medicine Specialist</li> <li>– Gastroenterologist</li> <li>– GI surgeon</li> <li>– Neurologist</li> <li>– Anaesthetist / Intensive care medicine specialist</li> <li>– Approved workplace monitoring scheme</li> <li>– Chemical pathologist</li> </ul>	(Trace Elements)  <u>Post bariatric surgery</u> - Able to be ordered by other medical practitioners if this indication is stated on the form.
Copper, urine		Yes  <ul style="list-style-type: none"> <li>– Paediatrician</li> <li>– Haematologist</li> <li>– Dermatologist</li> <li>– Oral Maxillofacial Surgeon / Oral Medicine Specialist</li> <li>– Gastroenterologist</li> <li>– GI surgeon</li> <li>– Neurologist</li> <li>– Anaesthetist / Intensive care medicine specialist</li> <li>– Approved workplace monitoring scheme</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE (Trace Elements)
Cord blood bilirubin		Yes	
Cortisol binding globulin		Yes  <ul style="list-style-type: none"> <li>– Endocrinologist</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE
Cortisol (free), urine 24hr	Yes		
Cortisol, saliva	Yes		GUIDELINE
Cortisol, serial	Yes		
Cortisol, serum	Yes		
Cortisol, urinary free	Yes		GUIDELINE
C-Peptide, plasma	Yes  See comment	Yes  <ul style="list-style-type: none"> <li>– Internal medicine specialist</li> <li>– Paediatrician</li> <li>– Endocrinologist</li> </ul>	GUIDELINE  <u>Post-bariatric surgery</u> - Able to be ordered by other medical practitioners if this

Test	Tier One Test	Tier Two Test	Comment
		<ul style="list-style-type: none"> <li>Chemical pathologist</li> <li>Bariatric surgeon</li> <li>Specialist lipid, metabolic or cardiovascular disease clinic</li> </ul>	indication is stated on the form.
C-Peptide , urine		<p>Yes</p> <ul style="list-style-type: none"> <li>Internal medicine specialist</li> <li>Paediatrician</li> <li>Endocrinologist</li> <li>Chemical pathologist</li> <li>Bariatric surgeon</li> <li>Specialist lipid, metabolic or cardiovascular disease clinic</li> </ul>	GUIDELINE
Creatine, fluid		Yes	
Creatine kinase, serum (CK)	Yes		
Creatine kinase (CK) electrophoresis		Yes	
Creatine kinase isoenzyme (CK-MB)		<p>Yes</p> <ul style="list-style-type: none"> <li>Cardiologist</li> <li>Internal medicine specialist</li> <li>Chemical pathologist</li> </ul>	GUIDELINE
Creatinine	Yes		
Creatinine, fluid	Yes		
Creatinine clearance	Yes		
Creatinine, urine	Yes		
Creatinine, urine 24hr	Yes		
Creatinine, CSF		Yes	
CRH-h extracted		Yes	
CRP - C-reactive protein test	Yes		
CRP - C-reactive protein test (high sensitivity)	See Hs-CRP	See Hs CRP	GUIDELINE
Cryoproteins	Yes		
CSF amino acid		Yes	
CSF appearance		Yes	
CSF B2-microglubulin (B2M), serum		Yes	

Test	Tier One Test	Tier Two Test	Comment
CSF glucose		Yes	
CSF lactate		Yes	
CSF lactate & pyruvate		Yes	
CSF protein		Yes	
Cystine, urine		Yes	
Cystine/methionine quantitation, plasma		Yes	
DDAVP osmolality, serial		Yes	
Dexamethasone suppression test	Yes		
DHEAS - Dehydroepiandrosterone Sulphate		Yes – Endocrinologist – Paediatrician – O&G specialist – Chemical pathologist	GUIDELINE
Dihydrotestosterone (DHT)		Yes – Endocrinologist – Paediatrician – O&G specialist – Chemical pathologist	GUIDELINE
Disaccharidase, duodenal biopsy		Yes	
DPD / CR Ratio	Yes		
eGFR calculation	Yes		
Elastase, faecal	Yes		
Epinephrine, plasma		Yes	
Epinephrine, urine		Yes	
Essential fatty acids		Yes – Specialist metabolic paediatrician – Paediatric gastroenterologist – Chemical pathologist	GUIDELINE
Estradiol (auto)	Yes		
Estrone, urine		Yes	
Ethylene glycol	Yes		
Everolimus		Yes	Research only
Faecal alpha-1 antitrypsin		Yes	

Test	Tier One Test	Tier Two Test	Comment
Faecal calprotectin	Yes		GUIDELINE
Faecal chymotrypsin		Yes	
Faecal sugar		Yes	
Fat faeces (stain)	Yes		
Ferritin, serum	Yes		
Fluorescence, plasma		Yes	
Fluoride, serum		Yes	
Fluoride, urine		Yes	
Folate RBC		Yes	
Folate, serum	Yes		
Free fatty acids		Yes	
Free T3	See T3 (free)		GUIDELINE
Fructosamine	Yes		GUIDELINE
FSH	Yes		
Galactose screen, blood		Yes	
Gastrin serum		Yes	
GCMS confirmation		Yes	
GCMS quantitation		Yes	
Gestational diabetes screen	Yes		
GGT, fluid	Yes		
GGT, serum	Yes		
GGT, urine		Yes	
Glucagon		Yes	
Glucose	Yes		
Glucose (2hr post meal)	Yes		
Glucose (fasting)	Yes		
Glucose, CSF		Yes	
Glucose tolerance test, oral	Yes		

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Test	Tier One Test	Tier Two Test	Comment
Glucose, fluid	Yes		
Glucose, qualitative - urine	Yes		
Glucose, serial	Yes		
Glycerol, serum		Yes	
Glycerol, urine		Yes	
Glycinebetaine, plasma		Yes	
Glycinebetaine, urine		Yes	
Glycosamino glycan		Yes	
Growth hormone	Yes		GUIDELINE
Haemoglobin pigments, plasma		Yes	
Haptoglobin	Yes		
HbA1c	Yes		
hCG	Yes		
hCG (pregnancy)	Yes		
hCG urine (pregnancy)	Yes		
HDL-cholesterol	Yes		
Hippuric acid		Yes	Referral for this test for workplace monitoring will incur a charge to the patient or employer
Histamine, urine		Yes	
Homocysteine, plasma		Yes <ul style="list-style-type: none"> <li>– Specialist lipid, metabolic or cardiovascular disease clinic</li> <li>– Paediatrician</li> <li>– Cardiologist</li> <li>– Vascular surgeon</li> <li>– Haematologist</li> <li>– Ophthalmologist</li> <li>– Neurologist</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE
Hs-CRP		Yes <ul style="list-style-type: none"> <li>– Cardiologist</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE

Test	Tier One Test	Tier Two Test	Comment
		<ul style="list-style-type: none"> <li>Internal medicine specialist</li> <li>Specialist lipid, metabolic or cardiovascular disease clinic</li> </ul>	
Hydroxyproline, urine		Yes	
Hypoxanthine guanine phosphoribosyl transferase		Yes	
IgA	Yes		
IgD	Yes		
IGF-1	Yes		GUIDELINE
IGF - BP3		Yes <ul style="list-style-type: none"> <li>Endocrinologist (including a paediatric endocrinologist)</li> <li>Chemical pathologist</li> </ul>	GUIDELINE
IgG	Yes		
IgG subclass levels		Yes	
IgM	Yes		
Immunofixation	Yes		
Indican, urine		Yes	
Inhibin B		Yes	
Insulin (total)	Yes  See comment	Yes <ul style="list-style-type: none"> <li>Paediatrician</li> <li>Endocrinologist</li> <li>Hepatologist</li> <li>GI surgeon</li> <li>Chemical pathologist</li> </ul>	GUIDELINE  <u>Post-bariatric surgery</u> - Able to be ordered by other medical practitioners if this indication is stated on the form.
Insulin antibody		Yes	
Insulin free		Yes	
Iodide, urine		Yes <ul style="list-style-type: none"> <li>Endocrinologist</li> <li>Internal medicine specialist</li> <li>Chemical pathologist</li> </ul>	GUIDELINE
Iodine, urine		See Iodide, urine	GUIDELINE
Ionised calcium, serum	Yes		

Test	Tier One Test	Tier Two Test	Comment
Ionised calcium, whole blood	Yes		
Iron binding capacity	Yes		
Iron RBC (stain)	Yes		
Iron saturation	Yes		
Iron, fluid	Yes		
Iron, serum	Yes		
Iron, urine		Yes	
Ketone, qualitative, urine		Yes	
Ketone, quantitative, urine	Yes		
Lactate, plasma		Yes	
Lactate, serial		Yes	
LD isoenz electrophoresis		Yes	
LD lactate dehydrogenase, CSF		Yes	
LDH, plasma	Yes		
LDH, fluid	Yes		
LDL-chol (meas)	Yes		
Lead, blood	Yes		
Lead, urine	Yes		
Leptin		Yes	
LH	Yes		
Lipase	Yes		
Lipid ultracentrifugation		Yes	
Lipids (fasting)	Yes		
Lipoprotein (a)		Yes – Specialist lipid, metabolic or cardiovascular disease clinic – Cardiologist – Chemical pathologist	GUIDELINE
Lipoprotein (electrophoresis)		Yes – Cardiologist	

Test	Tier One Test	Tier Two Test	Comment
		<ul style="list-style-type: none"> <li>– Endocrinologist</li> <li>– Metabolic specialist</li> <li>– Internal medicine specialist</li> <li>– Chemical pathologist</li> </ul>	
Liver copper		Yes	
Liver iron		Yes	
Macroprolactin (Prolactin, free)	Yes		
Magnesium, urine	Yes		
Magnesium, urine 24hr	Yes		
Magnesium, fluid	Yes		
Magnesium, plasma	Yes		
Mandelic acid, urine		Yes	
Manganese, blood		Yes	
Manganese, urine		Yes	
Melanogen, urine		Yes	
Mercury, plasma		Yes <ul style="list-style-type: none"> <li>– Paediatrician</li> <li>– Haematologist</li> <li>– Dermatologist</li> <li>– Oral Maxillofacial Surgeon / Oral Medicine Specialist</li> <li>– Gastroenterologist</li> <li>– GI surgeon</li> <li>– Neurologist</li> <li>– Anaesthetist / Intensive care medicine specialist</li> <li>– Approved workplace monitoring scheme</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE (Trace Elements)
Mercury, urine		Yes <ul style="list-style-type: none"> <li>– Paediatrician</li> <li>– Haematologist</li> <li>– Dermatologist</li> <li>– Oral Maxillofacial Surgeon / Oral Medicine Specialist</li> <li>– Gastroenterologist</li> <li>– GI surgeon</li> <li>– Neurologist</li> <li>– Anaesthetist / Intensive care medicine specialist</li> </ul>	GUIDELINE (Trace Elements)

Test	Tier One Test	Tier Two Test	Comment
		<ul style="list-style-type: none"> <li>– Approved workplace monitoring scheme</li> <li>– Chemical pathologist</li> </ul>	
Metanephrines, urine	Yes		
Metanephrines / normetanephrines, plasma	Yes		
Methyl bromide		Yes	
Methylhippuric		Yes	
Methylmalonic acid (MMA)		Yes	
Methylmercaptopurine		Yes	
Microalbumin, urine	Yes		
Microalbumin, urine 24hr	Yes		
Miller test		Yes	
Molybdenum, urine		Yes	
Mucopolysaccharide electrophoresis		Yes	
Mucopolysaccharides, total		Yes	
MxA screen for interferon-beta neutralising antibodies		Yes	
Mycophenolic acid		Yes	
Myoglobin		Yes	
Myoglobin, urine		Yes	
NAG, urine		Yes	
Neonatal bilirubin	Yes		
Neurotensin		Yes	
Neurotransmitter Disorders, CSF		Yes	
Nickel, urine		Yes	
NMDA receptor antibodies - N-methyl-D-aspartate		Yes	
Norepinephrine, plasma		Yes	
Norepinephrine, urine		Yes	
Normetanephrines, urine	Yes		
N-Telopeptides	Yes		

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Test	Tier One Test	Tier Two Test	Comment
Occult blood	Yes		Refer to local screening programme guidelines
Occult blood (human Hb spec)	Yes		Refer to local screening programme guidelines
Oestradiol	Yes		
Oestradiol sensitive	Yes		
Oestrone glucuronide excretion		Yes	
Oligoclonal Banding, CSF		Yes	
Oligosaccharides, urine		Yes	
Onconeural antibodies		Yes	
Organic acids, urine		Yes	
Orotate, urine		Yes	
Osmolality, fluid	Yes		
Osmolality, plasma	Yes		
Osmolality, urine	Yes		
Osteocalcin		Yes	Research only
Oxalate, urine	Yes		
Oxylate, plasma		Yes	
P1NP	Yes		
P3NP		Yes	
Pancreatic polypeptide		Yes	
Paraproteins quantitation	Yes		Reflex test
Parathyroid Hormone (intact)	Yes		
Parathyroid hormone related peptide		Yes	
PCT - Procalcitonin		Yes	
pH, fluid	Yes		
Phenol, urine		Yes	Referral for this test for workplace monitoring will incur a charge to the patient or employer.
Phenylpyruvic acid		Yes	Referral for this test for workplace monitoring will

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Test	Tier One Test	Tier Two Test	Comment
			incur a charge to the patient or employer.
Phosphate, fluid	Yes		
Phosphate, serum	Yes		
Phosphate, urine	Yes		
Phytanic acid, urine		Yes	
Plasma viscosity		Yes	
Plasmalogens washed red cells		Yes	
Porphobilinogen deaminase		Yes	
Porphobilinogen, urine	Yes		
Porphyrin (HPLC) full analysis	Yes		
Porphyrin screen	Yes		
Porphyrin, red cell	Yes		
Porphyrins, urine	Yes		
Potassium	Yes		
Potassium, urine	Yes		
Potassium,urine 24hr	Yes		
Potassium, fluid	Yes		
Pre albumin		Yes	
Pregnandiol glucuronide excretion		Yes	
Procollagen Type 1 (Procollagen 1 N-telopeptide)	Yes		
Procollagen Type 3 (Procollagen 3 N-telopeptide)		Yes	
Progesterone	Yes		
Progesterone, plasma	Yes		
Prolactin	Yes		
Prostatic acid phosphatase (PAP)		Yes – Urologist – Internal medicine specialist – Paediatrician – Haematologist	GUIDELINE

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Test	Tier One Test	Tier Two Test	Comment
		– Chemical pathologist	
Protein (electrophoresis)	Yes		
Protein, fluid	Yes		
Protein: creatinine ratio	Yes		
Protein CSF		Yes	
Protein urine	Yes		
Protein urine (electrophoresis)	Yes		
Protein urine 24hr	Yes		
Protein urine 24hr (electrophoresis)	Yes		
Proteins total, serum	Yes		
PSA	Yes		
PSA (free)	Yes		
PSA (free/total)	Yes		
Pterins, urine		Yes	
Purine / pyrimidine screen		Yes	
Pyruvate kinase		Yes	
Pyruvate/lactate ratio		Yes	
Rapid foetal fibronectin		Yes	
Reducing substances, urine		Yes	
Renin activity, plasma	Yes		
Rheumatoid factor	Yes		
Selenium, plasma		Yes – Paediatrician – Haematologist – Dermatologist – Oral Maxillofacial Surgeon / Oral Medicine Specialist – Gastroenterologist – GI surgeon – Neurologist – Anaesthetist / Intensive care medicine specialist – Approved workplace monitoring scheme	GUIDELINE (Trace Elements)

Test	Tier One Test	Tier Two Test	Comment
		– Chemical pathologist	
Selenium, red cell		<p>Yes</p> <ul style="list-style-type: none"> <li>– Paediatrician</li> <li>– Haematologist</li> <li>– Dermatologist</li> <li>– Oral Maxillofacial Surgeon / Oral Medicine Specialist</li> <li>– Gastroenterologist</li> <li>– GI surgeon</li> <li>– Neurologist</li> <li>– Anaesthetist / Intensive care medicine specialist</li> <li>– Approved workplace monitoring scheme</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE (Trace Elements)
Selenium, urine		<p>Yes</p> <ul style="list-style-type: none"> <li>– Paediatrician</li> <li>– Haematologist</li> <li>– Dermatologist</li> <li>– Oral Maxillofacial Surgeon / Oral Medicine Specialist</li> <li>– Gastroenterologist</li> <li>– GI surgeon</li> <li>– Neurologist</li> <li>– Anaesthetist / Intensive care medicine specialist</li> <li>– Approved workplace monitoring scheme</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE (Trace Elements)
Selenium, whole blood		<p>Yes</p> <ul style="list-style-type: none"> <li>– Paediatrician</li> <li>– Haematologist</li> <li>– Dermatologist</li> <li>– Oral Maxillofacial Surgeon / Oral Medicine Specialist</li> <li>– Gastroenterologist</li> <li>– GI surgeon</li> <li>– Neurologist</li> <li>– Anaesthetist / Intensive care medicine specialist</li> <li>– Approved workplace monitoring scheme</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE (Trace Elements)

Test	Tier One Test	Tier Two Test	Comment
Seminal fluid fructose		Yes	
Serotonin, whole blood		Yes – Endocrinologist – Oncologist – General surgeon – GI surgeon – Chemical pathologist	GUIDELINE
Serum free light chains		Yes	GUIDELINE Refer to Haematology
SHBG - Sex hormone binding globulin		Yes – Endocrinologist – O&G specialist – Chemical pathologist	GUIDELINE  Also see Testosterone
Silver, serum		Yes	
Silver, urine		Yes	
Sodium and Potassium	Yes		
Sodium and Potassium, urine	Yes		
Sodium and Potassium, urine 24hr	Yes		
Sodium, urine	Yes		
Sodium, urine 24hr	Yes		
Sodium, fluid	Yes		
Sodium, plasma	Yes		
Somatostatin (SRIF)		Yes	
Steatocrit	Yes		
Sulphonylureas		Yes	
Sweat test		Yes	
Synacthen stimulation test	Yes		
T3 (free)	Yes		GUIDELINE

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Test	Tier One Test	Tier Two Test	Comment
T3 RIA, total		Yes	
T4 (free)	Yes		GUIDELINE
T4 RIA, total		Yes	
Testosterone (free index)		Yes	GUIDELINE (see Sex Hormone Binding Globulin)
Testosterone (free)		Yes	GUIDELINE (see Sex Hormone Binding Globulin)
Testosterone, serum	Yes		
Thallium, urine		Yes	
Thiamine group	Yes  See comment	Yes	<u>Post bariatric surgery</u> - Able to be ordered by other medical practitioners if this indication is stated on the form. Should not be repeated any more than every 6 months.
Thiocyanate		Yes	
Thiopurine methyl transferase (TPMT)		Yes	
Thyroglobulin	Yes		
Thyroid binding globulin (TBG)		Yes	
Thyroid stimulating hormone, serum (TSH)	Yes		
Tin, urine		Yes	
TPMT (Azathiopine)		Yes	
Transcobalamin II		Yes	
Transferrin receptor	Yes		
Transferrin, serum	Yes		
Triglyceride, fluid	Yes		
Triglyceride, plasma	Yes		
Triglycerides (fasting)	Yes		
Trimethylamine, urine		Yes	

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Test	Tier One Test	Tier Two Test	Comment
Troponin I	Yes		
Troponin T	Yes		
Troponin T (rapid)	Yes		
Trypsin, random serum		Yes	
Tryptophan, - only for studies, Blood		Yes	
Tubular reabsorption of phosphate		Yes	
Tungsten, urine		Yes	
Urate or uric acid, serum	Yes		
Urate, fluid	Yes		
Urate, urine	Yes		
Urea breath test		Yes	
Urea, fluid	Yes		
Urea, plasma	Yes		
Urea, urine	Yes		
Urinary calculus analysis	Yes		
Urine, metabolic profile		Yes	
Urine pH	Yes		
Urinary free cortisol (UFC)	Yes		GUIDELINE See Cortisol, urinary free
Vanadium, urine		Yes	
Vasoactive intestinal peptide		Yes	
Very long chain fatty acids, plasma		Yes	
Vitamin A & E Group	Yes		GUIDELINE
Vitamin B1 (thiamine)		Yes – Paediatrician – Neurologist – Bariatric surgeon – Gastroenterologist – Chemical pathologist	GUIDELINE
Vitamin B12	Yes		
Vitamin B2		Yes – Paediatrician	GUIDELINE

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Test	Tier One Test	Tier Two Test	Comment
		<ul style="list-style-type: none"> <li>– Neurologist</li> <li>– Bariatric surgeon</li> <li>– Gastroenterologist</li> <li>– Chemical pathologist</li> </ul>	
Vitamin B6 (pyridoxine)		<p>Yes</p> <ul style="list-style-type: none"> <li>– Paediatrician</li> <li>– Neurologist</li> <li>– Bariatric surgeon</li> <li>– Gastroenterologist</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE
Vitamin D (25-hydroxy vitamin D)	<p>Yes</p> <p>Refer to the guideline</p>	<p>Yes</p> <ul style="list-style-type: none"> <li>– Endocrinologist</li> <li>– Hepatologist</li> <li>– Rheumatologist</li> <li>– Nephrologist</li> <li>– Gastroenterologist</li> <li>– GI surgeon</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE
Vitamin K		<p>Yes</p> <ul style="list-style-type: none"> <li>– Paediatrician</li> <li>– Haematologist</li> <li>– Gastroenterologist</li> <li>– Hepatologist</li> <li>– Chemical pathologist</li> </ul>	GUIDELINE
VMA, urine		Yes	
VMA, urine 24hr		Yes	
White cell cystine, blood		Yes	
Lysosomal white cell enzyme activities		Yes	
White cell pellet, blood		Yes	
Xanthochromia, CSF		Yes	
Zinc protoporphyrin		Yes	
Zinc, plasma	<p>Yes</p> <p>See comment</p>	<p>Yes</p> <ul style="list-style-type: none"> <li>– Paediatrician</li> <li>– Haematologist</li> <li>– Dermatologist</li> <li>– Oral Maxillofacial Surgeon / Oral Medicine Specialist</li> <li>– Gastroenterologist</li> <li>– GI surgeon</li> <li>– Neurologist</li> <li>– Anaesthetist / Intensive care medicine specialist</li> <li>– Oral medicine specialist</li> <li>– Chemical pathologist</li> </ul>	<p>GUIDELINE</p> <p>(Trace Elements)</p> <p><u>Post bariatric surgery</u> - Able to be ordered by other medical practitioner if this indication is stated on the form.</p>

Test	Tier One Test	Tier Two Test	Comment
		– Approved workplace monitoring scheme	
Zinc, urine		Yes – Paediatrician – Haematologist – Dermatologist – Oral Maxillofacial Surgeon / Oral Medicine Specialist – Gastroenterologist – GI surgeon – Neurologist – Anaesthetist / Intensive care medicine specialist – Oral medicine specialist – Approved workplace monitoring scheme – Chemical pathologist	GUIDELINE (Trace Elements)

TOXICOLOGY / DRUGS	Tier One Test	Tier Two Test	Comments
<b>Antibiotics</b>			
Amikacin peak	Yes		
Amikacin trough	Yes		
Amoxycillin level	Yes		
Cephalexin		Yes	This test is for Clinical Trials only
Flucloxacillin	Yes		
Gentamicin peak	Yes		
Gentamicin trough	Yes		
Gentamicin, serum	Yes		
Tobramycin peak	Yes		
Tobramycin trough	Yes		
Tobramycin, serum	Yes		
Vancomycin trough	Yes		
Vancomycin, serum	Yes		
<b>Toxicology / Narcotics</b>			
Amphetamine, Urine	Yes		
Barbiturate, Urine	Yes		
Benzylpiperazine (BZP)	Yes		See Note 1
Buprenorphine, urine	Yes		

TOXICOLOGY / DRUGS	Tier One Test	Tier Two Test	Comments
Cannabinoids, urine	Yes		See Note 1
Cocaine, urine	Yes		See Note 1
Datura	Yes		
GHB [Gammahydroxybutyric acid]	Yes		See Note 1
Methadone, plasma	Yes		
Methadone, urine	Yes		
Morphine, plasma/serum	Yes		
Opiates, urine	Yes		See Note 1
Pentachlorophenol	Yes		
Phencyclidine, urine	Yes		
Tramadol, urine	Yes		
Barbituates			
Barbiturate, urine	Yes		See Note 1
Phenobarbitone	Yes		
Butobarbitone, plasma	Yes		
Pentobarbitone	Yes		
Quinalbarbitone, Plasum (plasma / serum)	Yes		
Amylobarbitone	Yes		
Primidone (Phenobartitone)	Yes		
Quinalbarbitone	Yes		
Benzodiazepines			
Benzodiazepine, urine	Yes		See Note 1
Diazepam, plasma	Yes		
Solvents			
Toluene	Yes		Referral for these tests for workplace monitoring will incur a charge to the patient or employer.
Trichloroacetic acid	Yes		
Trichloroethanol	Yes		
Volatile solvent screen	Yes		
Xylene	Yes		
Diuretics			
Diuretic screen, urine	Yes		
Frusemide	Yes		
Thiazides	Yes		
Triamptere	Yes		

TOXICOLOGY / DRUGS	Tier One Test	Tier Two Test	Comments
<b>Sulphonylurea screen</b>			
Sulphonylureas, Plasum (plasma /serum)	Yes		
Chlorpropamide	Yes		
Glibenclamide	Yes		
Gliclazide	Yes		
Glipizide	Yes		
Tolbutamide	Yes		
<b>Tricyclic antidepressant drugs</b>			
Amoxapine	Yes		
Amitriptyline	Yes		
Clomipramine, plasma	Yes		
Desipramine, plasma	Yes		
Dothiepin	Yes		
Doxepin, plasma	Yes		
Imipramine, plasma	Yes		
Nordoxepin	Yes		
Nortriptyline	Yes		
Prothiaden	Yes		
Trimipramine, plasma	Yes		
<b>Phenothiazines</b>			
Chlorpramine	Yes		
Chlorpromazine	Yes		
Clozapine, plasma	Yes		Testing according to local guidelines
Stelazine	Yes		
Thioridazine	Yes	No	
<b>Anticonvulsants</b>			
Carbamazepine	Yes		
Clonazepam	Yes		
Ethosuximide	Yes		
Lamotrigine	Yes		
Phenobarbitone	Yes		
Phenytoin	Yes		
Primidone	Yes		

TOXICOLOGY / DRUGS	Tier One Test	Tier Two Test	Comments
Topiramate	Yes		
Valproate	Yes		
<b>Anti-Fungal</b>			
Itraconazole	Yes		
Posaconazole	Yes		
Voriconazole	Yes		
<b>Other Drugs</b>			
6-Methylmercaptopurine	Yes		
6-Thioguanine nucleotides, blood	Yes		
Alcohol (see Ethanol)	Yes		See Note 1
Amiodarone	Yes		
Azathioprine	Yes		
Busulphan	Yes		
Caffeine, plasma / serum	Yes		
Chloramphenicol	Yes		
Clobazam	Yes		
Clonazepam	Yes		
Cotinine urine	Yes		
Cyanide, blood	Yes		
Cyanide, other	Yes		
Cyclosporin A	Yes		
Cyclosporin, blood	Yes		
Digoxin	Yes		
Dioxin	Yes		See Note 2
Disopyramide	Yes		
Ethanol	Yes		See Note 1
Ethanol, urine	Yes		See Note 1
Ethylene Glycol, plasma	Yes		
Flecainide	Yes		
Flucytosine	Yes		
Flucytosine peak	Yes		
Flucytosine trough	Yes		
Fluoxetine	Yes		
GHB (Gammahydroxybutyric acid)	Yes		

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TOXICOLOGY / DRUGS	Tier One Test	Tier Two Test	Comments
Haloperidol	Yes		
Heparin assay, plasma	Yes		
Imatinib	Yes		
Isoniazid	Yes		
Ketamine	Yes		
Lignocaine	Yes		
Lithium	Yes		
Maprotiline	Yes		
Methanol, plasma / serum	Yes		
Methanol, urine	Yes		
Methotrexate, CSF	Yes		
Methotrexate, plasma	Yes		
Methylene chloride, blood	Yes		
Methylethylketone	Yes		
Methylphenidate, urine	Yes		
Metirapone test	Yes		
Mexiletine	Yes		
Mianserin	Yes		
Moclobemide	Yes		
Olanzapine	Yes		
Paracetamol, plasma	Yes		
Paraquat, urine	Yes		
Paroxetine	Yes		
Perhexiline	Yes		
Procainamide	Yes		
Propoxyphene	Yes		
Quinidine	Yes		
Quinine	Yes		
Rifadin (Rifampicin)	Yes		
Salicylate, plasma	Yes		
Sirolimus	Yes		
Sulphapyridine	Yes		
Sulphasalazine, plasma	Yes		
Tacrolimus	Yes		

**T e P u n i A r o P u t e a - P l a n n i n g a n d F u n d i n g D i r e c t o r a t e**

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TOXICOLOGY / DRUGS	Tier One Test	Tier Two Test	Comments
Theophylline	Yes		
Thiocyanate	Yes		
Thiopentone	Yes		
Tripres	Yes		
Warfarin	Yes		
Zopiclone	Yes		

## NOTES

**Note 1** - This is funded for medical testing purposes only. Any other setting requires pre-arrangement and will incur a charge to the patient or employer.

### **Note 2: Serum dioxin test (as per the PHO Services Agreement)**

Patients can only be referred for a serum dioxin test once the following requirements are met:

- The eligible person is fully informed about the serum dioxin test.
- The eligible person has not previously had a serum dioxin test.
- The eligible person's general practitioner is satisfied that the serum dioxin test is not an unnecessary risk to the person and will assist with improving the eligible person's wellbeing (including an assessment for unmet mental health needs).
- The eligible person's general practitioner has applied for and received confirmation from the service secretariat, that the application for a serum dioxin test has been successful.

## HAEMATOLOGY TESTS

This test list has been developed using the following categories.

- Full Blood Count and associated tests
- Coagulation
- Molecular
- Immunophenotyping
- Special haematology
- NZ Blood Service

An alphabetical list follows.

### NOTES:

<b>Tier One Test</b>	Refer to the Definitions
<b>Tier Two Test</b>	Refer to the Definitions

### **Occupational Health / Travel / Sport / Visa / Insurance Screening Tests**

Screening tests in the following categories are *not funded*:

- for travel or occupational health
- providing information for insurance or visa applications
- testing required by some sports groups
- for testing pre or post vaccination

Tier 2 tests in this category do not require authorisation if the clinician ordering the test does not have the appropriate vocational registration or credentialing.

### *Haematology Tests – by group*

<b>FULL BLOOD COUNT AND ASSOCIATED TESTS</b>			
<b>FULL BLOOD COUNT AND ASSOCIATED TESTS</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
1 <sup>st</sup> antenatal screen (including HIV)	Yes		
Antenatal antibodies including Coombs	Yes		
Subsequent antenatal screen	Yes		
CBC	Yes		
Cord blood	Yes		
Direct antiglobulin test (DAT ) - Previously called Coombs	Yes		
ESR	Yes		GUIDELINE
Blood film examination	Yes		
Infectious mononucleosis screen	Yes		
Plasma viscosity	Yes		
Red cell mass and plasma volume		Yes	
Reticulocytes	Yes		

<b>COAGULATION</b>			
<b>Test</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
Activated partial thromboplastin Time (APTT)	Yes		
Anti-thrombin assay (bio-functional)		Yes	
Anti-thrombin assay (immunological)		Yes	
Bleeding time	Yes		
Coagulation profile (excluding bleeding time) <ul style="list-style-type: none"> <li>– Prothrombin time</li> <li>– Activated partial thromboplastin clotting time (APTT)</li> <li>– Complete blood count (CBC)</li> </ul>	Yes		
Coagulation profile (including bleeding time) - or Platelet Function Analyser( PFA) <ul style="list-style-type: none"> <li>– Bleeding time</li> <li>– Prothrombin time</li> <li>– Activated partial thromboplastin clotting time (APTT)</li> <li>– Complete blood count (CBC)</li> </ul>	Yes		
Dabigatran assay		Yes	
D-dimer	Yes		This test is undertaken in conjunction with

			local VTE guidelines
Echis time/prothrombin time ( ratio)		Yes	
Euglobulin clot lysis time		Yes	
Factor II assay		Yes	
Factor IX assay		Yes	
Factor IX Inhibitor assay		Yes	
Factor V assay		Yes	
Factor VII assay		Yes	
Factor VIII inhibitor assay		Yes	
Factor VIII assay		Yes	
Factor X assay		Yes	
Factor XI assay		Yes	
Factor XII assay		Yes	
Factor XIII screen	Yes		
Factor XIII assay		Yes	
Fibrinogen	Yes		
HMW Kininogen		Yes	
INR	Yes		
Prothrombin time	Yes		
Reptilase time		Yes	
Thrombin time	Yes		
Thrombotic screen	Yes		
Thrombophilia Screen (Inherited)	Tier One Test	Tier Two Test	Comments
Antithrombin	Yes	Yes	GUIDELINE
APC Resistance		See comment	Also refer to the Genetics Test List - If there is an index case in the family, individual genetic tests (e.g. Antithrombin, or Protein C) are considered a Tier Two test as counselling may be required prior to testing other family members.
Protein C antigen			
Protein C functional			
Free protein S			
Functional protein S			
Factor V Leiden / Prothrombin genotype			
MTHFR genotype			
Activated protein C resistance ( APCR)			
Lupus Anticoagulant Screen	Tier One Test	Tier Two Test	

**T e P u n i A r o P u t e a - P l a n n i n g a n d F u n d i n g D i r e c t o r a t e**

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Lupus kaolin clotting time	Yes		
Dilute tissue thromboplastin	Yes		
DRVVT	Yes		
Silica clotting time, plasma	Yes		
<b>ADAMTS-13</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
ADAMTS-13 Activity Assay, plasma		Yes	
<b>Heparin</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
Heparin assay (unfractionated)	Yes		
Heparin assay-LMW	Yes		
Heparin induced platelet abs		Yes	
Heparin induced thrombocytopenia (HIT) screen		Yes	

<b>Platelet Function Screen (PFA)</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
Platelet function analysis (PFA) epinephrine	Yes		
Platelet function analysis (PFA) collagen ADP	Yes		
<b>Platelet Aggregation Studies</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
Platelet aggregation studies		Yes	
Spontaneous platelet aggregometry		Yes	
<b>VonWillebrand</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
Von Willebrand screen	Yes		
Von Willebrand screen: VWF Multimer		Yes	
Ristocetin cofactor	Yes		

<b>MOLECULAR</b>			
<b>Molecular</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
ABL kinase domain mutation analysis		Yes	
Acute leukaemia PCR panel		Yes	
Alpha globin gene deletions		Yes	
Alpha globin MUTA		Yes	
AMLI - ETO RT- PCR		Yes	
BCL1 gene re-arrangement by PCR		Yes	
BCL2/JH		Yes	
BCR/ABL P190		Yes	
BCR/ABL PCR group		Yes	
BCR/ABL multiplex PCR		Yes	

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Beta globin MUTA		Yes	
BRAF mutation analysis		Yes	
cDNA synthesis		Yes	
Chimerism		Yes	
Culture and harvest		Yes	
EZA/PBXI RT-PCR		Yes	
Factor VIII DHPLC / sequencing		Yes	
Factor VIII Intron 22 Gene Inv		Yes	
Fibrinogen MUTA		Yes	
FLT3 internal tandem Dup PCR		Yes	
FLT3 kinase domain mutation analysis		Yes	
HFE genotype	Yes  According to local referral guidelines (See the Genetics Test List)	Yes  See the Genetics Test List	
Hyperferritinaemia cataract syndrome		Yes	
IGHV somatic hypermutation		Yes	
Inversion (16) PCR		Yes	
Janus kinase mutation analysis		Yes	
KIAA1509-PDGFRBeta		Yes	
MLL PTD PCR		Yes	
MLL-AF4 t(4;11) RT PCR		Yes	
PML/RAR Alpha RT-PCR		Yes	
RNA Extraction		Yes	
RQ - PCR BCR-ABC		Yes	
Sequence for known mutation - gene sequence		Yes	
T cell receptor gene rearrangement		Yes	
TEL-AML PCR		Yes	
Tissue culture		Yes	

IMMUNOPHENOTYPING			
Lymphocyte Markers	Tier One Test	Tier Two Test	Comments
CD4/CD8		Yes	
CD34 assay		Yes	
CD20 assay		Yes	

Frozen CD34 assay		Yes	
Bone Marrow or Peripheral Blood Screen	Tier One Test	Tier Two Test	Comments
Acute leukaemia panel		Yes	
Allo harvest		Yes	
Antigenic lymphocyte function		Yes	
CFUGM Culture		Yes	
Chronic leukaemia panel (CLL/Lymphoproliferative panel)	Yes		GUIDELINE (Chronic lymphocytic leukaemia)
Cord harvest		Yes	
Heart transplant markers		Yes	
Immune deficiency		Yes	
Immunoenzyme assay		Yes	
Immunofluorescence panel		Yes	
Immunofluorescence single		Yes	
Memory and naive T cells		Yes	
Memory B cells		Yes	
Mitogenic lymphocyte function		Yes	
Minimal Residual Disease (MRD) flow cytometry		Yes	
PNH screening		Yes	
PNH testing for quantitation of clone size		Yes	
Promyelocytic leukaemia protein (PML)		Yes	

SPECIAL HAEMATOLOGY			
Test	Tier One Test	Tier Two Test	Comments
EMA binding		Yes	
G6PD	Yes		
Haemoglobin H stain	Yes		
Haemosiderin, urine	Yes		
Hb A2 quantitation		Yes	
Heinz body screen	Yes		
HPLC chromatogram		Yes	
Methaemalbumin	Yes		
Methaemoglobin	Yes		
Oxygen affinity p50		Yes	
PNH screen - flow cytometry		Yes	

<b>SPECIAL HAEMATOLOGY</b>			
<b>Test</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
Pyrimidine 5'Nucleotidase		Yes	
Pyruvate kinase (PK) assay		Yes	
Pyruvate kinase (PK) screen	Yes		
Reduced glutathione	Yes		
Sulphaemoglobin		Yes	

<b>PARASITES</b>			
<b>Malaria</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
Malaria antigen	Yes		
<u>Malaria blood film examination</u>			
Malaria screen - thick film	Yes		
Malaria screen - thin film	Yes		
<b>Microfilaria</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
Filiaria - blood film examination for microfilaria	Yes		
<b>Haemoglobinopathy Investigations</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
Haemoglobinopathy screen	Yes		GUIDELINE  Also refer to the Genetics Test List
Hb (unstable)	Yes		
Hb Barts quantitation	Yes		
Hb Barts EPP ELU	Yes		
HB capillary	Yes		
Hb cellulose EPP	Yes		
Hb electrophoresis - acid gel	Yes		
Hb electrophoresis - alkaline	Yes		
Hb sickle cell test	Yes		
Hb stability	Yes		
HbF	Yes		
HbF (inclusions)	Yes		
Kleihauer test	Yes		
HbS	Yes		

<b>Bone Marrow or Peripheral Blood Screen</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
Bone marrow aspirate		Yes	
Bone marrow trephine		Yes	

CFU-GM assay		Yes	
Perl's stain		Yes	
Peroxidase		Yes	
Spontaneous erythroid growth		Yes	
<b>Other Special Haematology Tests</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
Carboxyhaemoglobin	Yes		
CSF cytology		Yes	
Cytochemistry		Yes	
Erythropoietin		Yes	
Mixed lymphocyte culture		Yes	
Muramidase		Yes	
NAP Score (Neutrophil alkaline phosphatase score, also called Leukocyte alkaline phosphatase)		Yes	
NBT Test (Nitro-blue tetrazolium test)		Yes	
PAS stain (Periodic acid schiff)		Yes	
Serum free light chains		Yes	GUIDELINE

<b>NZ BLOOD SERVICE</b>				
<b>Test</b>		<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
ABO genotype		Yes		
ABO subtypes	ABO Subtypes	Yes		
ABO subtypes	Bg Phenotype	Yes		
ABO subtypes	Cartwright Phenotype	Yes		
ABO subtypes	Ce Type	Yes		
ABO subtypes	Chagas Screening Test - Bioelisa	Yes		
ABO subtypes	Colton Phenotype	Yes		
ABO subtypes	Duffy Phenotype	Yes		
ABO subtypes	f(ce) Type	Yes		
ABO subtypes	Fya Type	Yes		
ABO subtypes	Fyb Type	Yes		
ABO subtypes	H AND I Phenotype	Yes		
ABO subtypes	Jka Type	Yes		
ABO subtypes	Jkb Type	Yes		

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ABO subtypes	k Type	Yes		
ABO subtypes	K Type	Yes		
ABO subtypes	Kell Phenotype	Yes		
ABO subtypes	Kidd Phenotype	Yes		
ABO subtypes	Lewis Phenotype	Yes		
ABO subtypes	Lutheran Phenotype	Yes		
ABO subtypes	MNS Phenotype	Yes		
ABO subtypes	P Phenotype	Yes		
ABO subtypes	Rare Phenotype	Yes		
ABO subtypes	Rh/K Phenotype	Yes		
ABO subtypes	s Type	Yes		
ABO subtypes	S Type	Yes		
ABO subtypes	Scianna Phenotype	Yes		
ABO subtypes	Wright Phenotype	Yes		
Anti HTLV 1		Yes		
Antibody Absorption	ALLOADSORP	Yes		
Antibody Absorption	AUTOADSORP	Yes		
Antibody Elution	Antibody Elution Part 1	Yes		
Antibody Elution	Antibody Elution Part 2	Yes		
Antibody Identification	Red Cell Antibody Identification Part 1	Yes		
Antibody Identification	Red Cell Antibody Identification Part 2	Yes		
Antibody Screen	Red Cell Antibody Screen	Yes		
Antibody Titre	Red Cell Antibody Titration 1	Yes		
Antibody Titre	Red Cell Antibody Titration 2	Yes		
APT Downey		Yes		
Blood Group [ABO & Rh(D)]	ABO/Rh First Pass Grouping	Yes		
Blood Group [ABO & Rh(D)]	ABO/Rh New Born	Yes		
Cadaver Donor (Full X-match all recipients)		Yes		
Cold Agglutinin Screen		Yes		
Crossmatch Live Related Renal		Yes		

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Direct Antiglobulin Test (DAT)	DAT Broad Spectrum	Yes		
Direct Antiglobulin Test (DAT)	DAT Monospecifics	Yes		
Direct Antiglobulin Test (DAT)	Direct AHG Test	Yes		
Donath-Landsteiner		Yes		
Flow Cytometric Crossmatch		Yes		
Genotyping Kit: ABO		Yes		
Genotyping Kit: Kell, Kidd, Duffy		Yes		
Genotyping Kit: MNS		Yes		
Genotyping Kit: Rh CDE		Yes		
High Res DR – BMDR		Yes		
HLA - Class I & II: Low Res mABDRB1*3*4*5		Yes		
HLA - Class I and II: B Lymphocyte Antibody Screen		Yes		
HLA - Class I: AB Low Res SSP		Yes		
HLA - Class I: ABC-DNA		Yes		
HLA - Class I: HLA-AB Serology		Yes		
HLA - Class I: HLA-B27		Yes		
HLA - Class I: T Lymphocyte Antibody ID		Yes		
HLA - Class I: T Lymphocyte Antibody Screen		Yes		
HLA - Class I: T Lymphocyte Xmatch		Yes		
HLA - Class I:A - DNA		Yes		
HLA - Class I:AB - DNA		Yes		
HLA - Class I:B -DNA		Yes		
HLA - Class I:Cw - DNA		Yes		
HLA - Class I:mCw - DNA BMDR		Yes		
HLA - Class II: DP DNA		Yes		
HLA - Class II: DQ – DNA		Yes		
HLA - Class II: DR – DNA		Yes		
HLA - Class II: DR - DNA (High Res. Confirm)		Yes		
HLA - Class II: DRB1*3*4*5		Yes		
HLA Class I & II: Low Res ABDR DNA		Yes		
HLA Class I & II: Low Res ABDR DNA SSP		Yes		

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HLA Class I: Low Res ABC DNA SSP		Yes		
HLA Class II : B Lymphocyte Xmatch		Yes		
HLA Class II: Low Res DRDQ DNA		Yes		
HLA Class II: Low Res DRDQ DNA SSP		Yes		
HLA Matched Platelet Search		Yes		
HLA-Class I: A High Res SBT		Yes		
HLA-Class I: ABC High Res SBT		Yes		
HLA-Class I: B High Res SBT		Yes		
HLA-Class I: C High Res SBT		Yes		
HLA-Class II: DRB1 High Res SBT		Yes		
Iso Anitibody Titre	High Titre Anti-A, Anti-B	Yes		
Iso Anitibody Titre	IgG Anti-A Titre	Yes		
Iso Anitibody Titre	IgG Anti-B Titre	Yes		
Iso Anitibody Titre	IgM Anti-A Titre	Yes		
Iso Anitibody Titre	IgM Anti-B Titre	Yes		
Kleihauer test		Yes		
Liver Transplant Programme		Yes		
Luminex Platelet Antibodies		Yes		
Luminex PRA Class 1		Yes		
Luminex PRA Class 2		Yes		
Luminex Screen Class 1		Yes		
Luminex Screen Class 2		Yes		
Luminex Screen Single Antigen Class 1		Yes		
Luminex Screen Single Antigen Class 2		Yes		
MAIPA Screen		Yes		
Platelet Antigen Genotype – DNA		Yes		
Platelet Antigen Phenotype		Yes		
Platelet Associated Antibodies (PAA)		Yes		
Platelet Crossmatch (SPRCA)		Yes		
PLT Crossmatch		Yes		
Recipient Group Confirm	ABO History	Yes		
Rh (D) Investigations	DVI Screen	Yes		
Rh (D) Investigations	Rh (D) Invs	Yes		

Rh Phenotype	Rhesus phenotype	Yes		
Rh Phenotype	c Type	Yes		
Rh Phenotype	C Type	Yes		
Rh Phenotype	CDE Antigen Screening	Yes		
Rh Phenotype	Cw Type	Yes		
Rh Phenotype	D Type	Yes		
Rh Phenotype	e Type	Yes		
Rh Phenotype	E Type	Yes		
Serum Platelet Antibodies (SPA)		Yes		
T-Activation		Yes		
Thermal Amplitude (Cold Agglutinins)		Yes		
Transfusion Reaction Investigation		Yes		

#### *Haematology Tests – alphabetical order*

Test	Tier One Test	Tier Two Test	Comment
ABL kinase domain mutation analysis		Yes	
ABO genotype	Yes		
ABO subtypes	Yes		
ABO subtypes - Bg Phenotype	Yes		
ABO subtypes - Cartwright Phenotype	Yes		
ABO subtypes - Ce Type	Yes		
ABO subtypes - Chagas Screening Test - Bioelisa	Yes		
ABO subtypes - Colton Phenotype	Yes		
ABO subtypes - Duffy Phenotype	Yes		
ABO subtypes - f(ce) Type	Yes		
ABO subtypes - Fya Type	Yes		
ABO subtypes - Fyb Type	Yes		
ABO subtypes - H AND I Phenotype	Yes		
ABO subtypes - JkaType	Yes		
ABO subtypes - Jkb Type	Yes		
ABO subtypes - k Type	Yes		
ABO subtypes - K Type	Yes		
ABO subtypes - Kell Phenotype	Yes		
ABO subtypes - Kidd Phenotype	Yes		
ABO subtypes - Lewis Phenotype	Yes		
ABO subtypes - Lutheran Phenotype	Yes		

Test	Tier One Test	Tier Two Test	Comment
ABO subtypes - MNS Phenotype	Yes		
ABO subtypes - P Phenotype	Yes		
ABO subtypes - Rare Phenotype	Yes		
ABO subtypes - Rh/K Phenotype	Yes		
ABO subtypes - s Type	Yes		
ABO subtypes - S Type	Yes		
ABO subtypes - Scianna Phenotype	Yes		
ABO subtypes - Wright Phenotype	Yes		
Activated partial thromboplastin Time (APTT)	Yes		
Acute leukaemia panel		Yes	
Acute leukaemia PCR panel		Yes	
ADAMTS-13 Activity Assay, plasma		Yes	
Allo harvest		Yes	
Alpha globin gene deletions		Yes	
Alpha globin MUTA		Yes	
AML1 - ETO RT- PCR		Yes	
Antenatal antibodies including Coombs	Yes		
Anti HTLV 1	Yes		
Antibody Absorption - ALLOADSORP	Yes		
Antibody Absorption - AUTOADSORP	Yes		
Antibody Elution - Antibody Elution Part 1	Yes		
Antibody Elution - Antibody Elution Part 2	Yes		
Antibody Identification - Red Cell Antibody Identification Part 1	Yes		
Antibody Identification - Red Cell Antibody Identification Part 2	Yes		
Antibody Screen - Red Cell Antibody Screen	Yes		
Antibody Titre - Red Cell Antibody Titration 1	Yes		
Antibody Titre - Red Cell Antibody Titration 2	Yes		
Antigenic lymphocyte function		Yes	
Anti-thrombin assay (bio-functional)		Yes	
Anti-thrombin assay (immunological)		Yes	
APT Downey	Yes		
BCL1 gene re-arrangement by PCR		Yes	
BCL2/JH		Yes	
BCR/ABL PCR group		Yes	

Test	Tier One Test	Tier Two Test	Comment
BCR/ABL multiplex PCR		Yes	
BCR/ABL P190		Yes	
Beta globin MUTA		Yes	
Bleeding time	Yes		
Blood film examination	Yes		
Blood Group [ABO & Rh(D)] - ABO/Rh First Pass Grouping	Yes		
Blood Group [ABO & Rh(D)] - ABO/Rh New Born	Yes		
Bone marrow aspirate		Yes	
Bone marrow trephine		Yes	
BRAF mutation analysis		Yes	
Cadaver Donor (Full X-match all recipients)	Yes		
Carboxyhaemoglobin	Yes		
CBC	Yes		
CD20 assay		Yes	
CD34 assay		Yes	
CD4/CD8		Yes	
cDNA synthesis		Yes	
CFU-GM assay		Yes	
CFUGM Culture		Yes	
Chimerism		Yes	
Chronic leukaemia panel (CLL/Lymphoproliferative panel)	Yes		GUIDELINE (Chronic lymphocytic leukaemia)
Coagulation profile (excluding bleeding time) <ul style="list-style-type: none"> <li>– Prothrombin time</li> <li>– Activated partial thromboplastin clotting time (APTT)</li> <li>– Complete blood count (CBC)</li> </ul>	Yes		
Coagulation profile (including bleeding time) - or Platelet Function Analyser( PFA) <ul style="list-style-type: none"> <li>– Bleeding time</li> <li>– Prothrombin time</li> <li>– Activated partial thromboplastin clotting time (APTT)</li> <li>– Complete blood count (CBC)</li> </ul>	Yes		
Cold Agglutinin Screen	Yes		
Cord blood	Yes		
Cord harvest		Yes	

Test	Tier One Test	Tier Two Test	Comment
Crossmatch Live Related Renal	Yes		
CSF cytology		Yes	
Culture and harvest		Yes	
Cytochemistry		Yes	
Dabigatran assay		Yes	
D-dimer	Yes		This test is undertaken in conjunction with local VTE guidelines
Direct antiglobulin test (DAT) - Previously called Coombs	Yes		
Direct Antiglobulin Test (DAT) - DAT Broad Spectrum	Yes		
Direct Antiglobulin Test (DAT) - DAT Monospecifics	Yes		
Direct Antiglobulin Test (DAT) - Direct AHG Test	Yes		
Donath-Landsteiner	Yes		
Echis time/prothrombin time ( ratio)		Yes	
EMA binding		Yes	
Erythropoietin		Yes	
ESR	Yes		GUIDELINE
Euglobulin clot lysis time		Yes	
EZA/PBXI RT-PCR		Yes	
Factor II assay		Yes	
Factor IX assay		Yes	
Factor IX Inhibitor assay		Yes	
Factor V assay		Yes	
Factor VII assay		Yes	
Factor VIII assay		Yes	
Factor VIII DHPLC / sequencing		Yes	
Factor VIII inhibitor assay		Yes	
Factor VIII Intron 22 Gene Inv		Yes	
Factor X assay		Yes	
Factor XI assay		Yes	
Factor XII assay		Yes	
Factor XIII assay		Yes	
Factor XIII screen	Yes		
Fibrinogen	Yes		
Fibrinogen MUTA		Yes	

Test	Tier One Test	Tier Two Test	Comment
Filiaria - blood film examination for microfilaria	Yes		
First antenatal screen (including HIV)	Yes		
Flow Cytometric Crossmatch	Yes		
FLT3 internal tandem Dup PCR		Yes	
FLT3 kinase domain mutation analysis		Yes	
Frozen CD34 assay		Yes	
G6PD	Yes		
Genotyping Kit: ABO	Yes		
Genotyping Kit: Kell, Kidd, Duffy	Yes		
Genotyping Kit: MNS	Yes		
Genotyping Kit: Rh CDE	Yes		
Haemoglobin H stain	Yes		
Haemoglobinopathy screen	Yes		GUIDELINE (Haemoglobinopathy investigations) See the Genetics Test List
Haemosiderin, urine	Yes		
Hb (unstable)	Yes		GUIDELINE (Haemoglobinopathy investigations) See the Genetics Test List
Hb A2 quantitation		Yes	
Hb Barts EPP ELU	Yes		GUIDELINE (Haemoglobinopathy investigations) See the Genetics Test List
Hb Barts quantitation	Yes		GUIDELINE (Haemoglobinopathy investigations) See the Genetics Test List
Hb capillary	Yes		GUIDELINE (Haemoglobinopathy investigations) See the Genetics Test List
Hb cellulose EPP	Yes		GUIDELINE (Haemoglobinopathy investigations) See the Genetics Test List
Hb electrophoresis - acid gel	Yes		GUIDELINE (Haemoglobinopathy investigations) See the Genetics Test List
Hb electrophoresis - alkaline	Yes		GUIDELINE (Haemoglobinopathy investigations) See the Genetics Test List
Hb sickle cell test	Yes		GUIDELINE (Haemoglobinopathy investigations)

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Telephone (06) 878 8109 extension 4617; Fax 06 878 1374 Email: Di.Vicary@hawkesbaydhb.govt.nz; [www.hawkesbay.health.nz](http://www.hawkesbay.health.nz)  
Corporate Office, Cnr Omahu Road and McLeod Street, Private Bag 9014, Hastings 4156, New Zealand

Test	Tier One Test	Tier Two Test	Comment
			See the Genetics Test List
Hb stability	Yes		GUIDELINE (Haemaglobinopathy investigations) See the Genetics Test List
HbF	Yes		GUIDELINE (Haemaglobinopathy investigations) See the Genetics Test List
HbF (inclusions)	Yes		GUIDELINE (Haemaglobinopathy investigations) See the Genetics Test List
Kleihauer test	Yes		GUIDELINE (Haemaglobinopathy investigations) See the Genetics Test List -
HbS	Yes		GUIDELINE (Haemaglobinopathy investigations) See the Genetics Test List
Heart transplant markers		Yes	
Heinz body screen	Yes		
Heparin assay (unfractionated)	Yes		
Heparin assay-LMW	Yes		
Heparin induced platelet abs		Yes	
Heparin induced thrombocytopenia (HIT) screen		Yes	
HFE genotype	Yes  According to local referral guidelines (See the Genetics Test List)	Yes  See the Genetics Test List	
High Res DR – BMDR	Yes		
HLA - Class I & II: Low Res mABDRB1*3*4*5	Yes		
HLA - Class I and II: B Lymphocyte Antibody Screen	Yes		
HLA - Class I: AB Low Res SSP	Yes		
HLA - Class I: ABC-DNA	Yes		
HLA - Class I: HLA-AB Serology	Yes		
HLA - Class I: HLA-B27	Yes		
HLA - Class I: T Lymphocyte Antibody ID	Yes		
HLA - Class I: T Lymphocyte Antibody Screen	Yes		
HLA - Class I: T Lymphocyte Xmatch	Yes		
HLA - Class I:A - DNA	Yes		

Test	Tier One Test	Tier Two Test	Comment
HLA - Class I:AB - DNA	Yes		
HLA - Class I:B -DNA	Yes		
HLA - Class I:Cw - DNA	Yes		
HLA - Class I:mCw - DNA BMDR	Yes		
HLA - Class II: DP DNA	Yes		
HLA - Class II: DQ – DNA	Yes		
HLA - Class II: DR – DNA	Yes		
HLA - Class II: DR - DNA (High Res. Confirm)	Yes		
HLA - Class II: DRB1*3*4*5	Yes		
HLA Class I & II: Low Res ABDR DNA	Yes		
HLA Class I & II: Low Res ABDR DNA SSP	Yes		
HLA Class I: Low Res ABC DNA SSP	Yes		
HLA Class II : B Lymphocyte Xmatch	Yes		
HLA Class II: Low Res DRDQ DNA	Yes		
HLA Class II: Low Res DRDQ DNA SSP	Yes		
HLA Matched Platelet Search	Yes		
HLA-Class I: A High Res SBT	Yes		
HLA-Class I: ABC High Res SBT	Yes		
HLA-Class I: B High Res SBT	Yes		
HLA-Class I: C High Res SBT	Yes		
HLA-Class II: DRB1 High Res SBT	Yes		
HMW Kininogen		Yes	
HPLC chromatogram		Yes	
Hyperferritinaemia cataract syndrome		Yes	
IGHV somatic hypermutation		Yes	
Immune deficiency		Yes	
Immunoenzyme assay		Yes	
Immunofluorescence panel		Yes	
Immunofluorescence single		Yes	
Infectious mononucleosis screen	Yes		
INR	Yes		
Inversion (16) PCR		Yes	
Iso Anitibody Titre - High Titre Anti-A, Anti-B	Yes		
Iso Anitibody Titre - IgG Anti-A Titre	Yes		
Iso Anitibody Titre - IgG Anti-B Titre	Yes		
Iso Anitibody Titre - IgM Anti-A Titre	Yes		

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Test	Tier One Test	Tier Two Test	Comment
Iso Antibody Titre - IgM Anti-B Titre	Yes		
Janus kinase mutation analysis		Yes	
KIAA1509-PDGFRBeta		Yes	
Kleihauer test	Yes		
Liver Transplant Programme	Yes		
Luminex Platelet Antibodies	Yes		
Luminex PRA Class 1	Yes		
Luminex PRA Class 2	Yes		
Luminex Screen Class 1	Yes		
Luminex Screen Class 2	Yes		
Luminex Screen Single Antigen Class 1	Yes		
Luminex Screen Single Antigen Class 2	Yes		
<b>Lupus Anticoagulant Screen</b>			
- Lupus kaolin clotting time	Yes		
- Dilute tissue thromboplastin	Yes		
- DRVVT	Yes		
- Silica clotting time, plasma	Yes		
MAIPA Screen	Yes		
Malaria antigen	Yes		
Malaria screen - thick film	Yes		
Malaria screen - thin film	Yes		
Memory and naive T cells		Yes	
Memory B cells		Yes	
Methaemalbumin	Yes		
Methaemoglobin	Yes		
Minimal Residual Disease (MRD) flow cytometry		Yes	
Mitogenic lymphocyte function		Yes	
Mixed lymphocyte culture		Yes	
MLL PTD PCR		Yes	
MLL-AF4 t(4;11) RT PCR		Yes	
Muramidase		Yes	
NAP Score (Neutrophil alkaline phosphatase score, also called Leukocyte alkaline phosphatase)		Yes	
NBT Test (Nitro-blue tetrazolium test)		Yes	
Oxygen affinity p50		Yes	

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Test	Tier One Test	Tier Two Test	Comment
PAS stain (Periodic acid schiff)		Yes	
Perl's stain		Yes	
Peroxidase		Yes	
Plasma viscosity	Yes		
Platelet aggregation studies		Yes	
Platelet Antigen Genotype – DNA	Yes		
Platelet Antigen Phenotype	Yes		
Platelet Associated Antibodies (PAA)	Yes		
Platelet Crossmatch (SPRCA)	Yes		
Platelet function analysis (PFA) collagen ADP	Yes		
Platelet function analysis (PFA) epinephrine	Yes		
PLT Crossmatch	Yes		
PML/RAR Alpha RT-PCR		Yes	
PNH screen - flow cytometry		Yes	
PNH screening		Yes	
PNH testing for quantitation of clone size		Yes	
Promyelocytic leukaemia protein (PML)		Yes	
Prothrombin time	Yes		
Pyrimidine 5'Nucleotidase		Yes	
Pyruvate kinase (PK) assay		Yes	
Pyruvate kinase (PK) screen	Yes		
Recipient Group Confirm - ABO History	Yes		
Red cell mass and plasma volume		Yes	
Reduced glutathione	Yes		
Reptilase time		Yes	
Reticulocytes	Yes		
Rh (D) Investigations - DVI Screen	Yes		
Rh (D) Investigations - Rh (D) Invs	Yes		
Rh Phenotype - c Type	Yes		
Rh Phenotype - C Type	Yes		
Rh Phenotype - CDE Antigen Screening	Yes		
Rh Phenotype - Cw Type	Yes		
Rh Phenotype - D Type	Yes		
Rh Phenotype - e Type	Yes		
Rh Phenotype - E Type	Yes		

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Test	Tier One Test	Tier Two Test	Comment
Rh Phenotype - Rhesus phenotype	Yes		
Ristocetin cofactor	Yes		
RNA Extraction		Yes	
RQ - PCR BCR-ABC		Yes	
Sequence for known mutation - gene sequence		Yes	
Serum free light chains		Yes	GUIDELINE
Serum Platelet Antibodies (SPA)	Yes		
Spontaneous erythroid growth		Yes	
Spontaneous platelet aggregometry		Yes	
Subsequent antenatal screen	Yes		
Sulphaemoglobin		Yes	
T cell receptor gene rearrangement		Yes	
T-Activation	Yes		
TEL-AML PCR		Yes	
Thermal Amplitude (Cold Agglutinins)	Yes		
Thrombin time	Yes		
<b>Thrombophilia Screen (Inherited)</b> - Antithrombin - APC Resistance - Protein C antigen - Protein C functional - Free protein S - Functional protein S - Factor V Leiden / Prothrombin genotype - MTHFR genotype - Activated protein C resistance (APCR)	Yes	Yes  See comment	GUIDELINE  Also refer to the Genetics Test List - If there is an index case in the family, individual genetic tests (e.g. Antithrombin, or Protein C) are considered a Tier Two test as counselling may be required prior to testing other family members
Thrombotic screen	Yes		
Tissue culture		Yes	
Transfusion Reaction Investigation	Yes		
Von Willebrand screen	Yes		
Von Willebrand screen: VWF Multimer		Yes	

## MICROBIOLOGY TESTS

### NOTES:

<b>Tier One Test</b>	Refer to the Definitions
<b>Tier Two Test</b>	Refer to the Definitions
<b>NAAT</b>	Relates to any type of molecular detection including PCR.

### Occupational Health / Travel / Sport / Visa / Insurance Screening Tests

Screening tests in the following categories are *not funded*:

- for travel or occupational health
- providing information for insurance or visa applications
- testing required by some sports groups
- for testing pre or post vaccination

Tier 2 tests in this category do not require authorisation if the clinician ordering the test does not have the appropriate vocational registration or credentialing.

### Public health testing

The Public health response to notified diseases is heavily dependent on laboratory confirmation of the causative agent. It is recognised that laboratory confirmation of the causative agent may be of little direct benefit to the treatment of individual patients. Community control of notifiable diseases is impossible without identification of the causative organism. Hence from the public health perspective, whenever possible, laboratory testing should be undertaken on all suspected cases of notifiable disease as well as suspected cases of any unusual or novel disease.

### Public health notification

Notification to Public Health of specified communicable and other conditions is a legal requirement of medical practitioners and laboratories under the Health Act 1956 and the TB Act 1948. The purpose of notification is to manage cases and reduce risk to the community. Note that the limited information provided in Direct Laboratory Notification (DLN) does NOT replace clinician notification.

### Sentinel Public Health Screening

Laboratories should set up sentinel systems for monitoring the susceptibility of local pathogens which are likely to change over time – for example test urines from a sample of patients with uncomplicated UTI to determine antimicrobial susceptibility on an annual basis, or neisseria gonorrhoeae when NAAT is performed on most samples. This will involve laboratories working locally with referrers to set up protocols.

NOT FUNDED	Tier One Test	Tier Two Test	Comments
Chlamydia IgG	N/A	N/A	Not funded
Helicobacter pylori serum antibody	N/A	N/A	Not funded H. pylori faecal antigen is the preferred test.
Hep C antibody immunoblot	N/A	N/A	GUIDELINE Not Funded
Hepatitis C confirmatory immunoblot	N/A	N/A	GUIDELINE Not funded
TORCH screening	N/A	N/A	GUIDELINE Not Funded [This is not a test. Refer to the individual entries]

Typhoid serology	N/A	N/A	Not funded
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Test	Tier One Test	Tier Two Test	Health Act or TB Act	Comment
Acanthamoeba culture		Yes		
Adenovirus antibody		Yes		
Adenovirus culture		Yes		
Adenovirus faecal antigen	Yes			GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
Adenovirus NAAT		Yes		
Amoebae culture		Yes		
Anaerobic culture	Yes			
Angiostrongylus antibody		Yes		
Antiretroviral susceptibility		Yes		
Arbovirus antibody / antigen  See also: <ul style="list-style-type: none"> <li>- Barmah Forest virus antibody</li> <li>- Chikungunya virus antibody</li> <li>- Dengue (Ab or Ag)</li> <li>- Ross River virus antibody</li> </ul>		Yes	Notifiable	Consult the local microbiologist to discuss appropriate testing and interpretation of results. See also Note 1.
ASO antibody	Yes			See also anti-DNAse B antibody
Aspergillus culture	Yes			See also Fungal - microscopy and culture
Aspergillus NAAT		Yes		
Aspirate - crystals examination	Yes			
Aspirate - microscopy & culture	Yes			
Barmah Forest virus antibody		Yes	Notifiable	Consult the local microbiologist to discuss appropriate testing and interpretation of results. See also Note 1.
Bartonella antibody		Yes		See also Cat scratch disease antibody
Bartonella NAAT		Yes		
Beta-D-glucan antigen		Yes		
Blood Culture - adult or paediatric	Yes			
Bone bank culture		Yes		

Test	Tier One Test	Tier Two Test	Health Act or TB Act	Comment
Bordetella IgA	Yes			See Note 2
Bordetella IgG	Yes		Notifiable	
Bordetella pertussis culture	Yes		Notifiable	GUIDELINE
Bordetella pertussis NAAT	Yes		Notifiable	GUIDELINE
Borrelia antibody		Yes	Notifiable	Tick-borne encephalitis is notifiable under arboviral diseases  See Note 1
Bronchial brush - microscopy & culture		Yes		
Bronchial washing - microscopy and culture		Yes		
Bronchial-alveolar lavage -microscopy and culture		Yes		
Brucella antibody		Yes	Notifiable	A four-fold or greater rise in titre between acute and convalescent specimens is notifiable.
Burkholderia culture	Yes			
C. difficile antigen	Yes			GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
C. difficile culture		Yes		GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
C. difficile NAAT		Yes		GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
C. difficile toxin A+B / GDH	Yes			GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
C. difficile typing		Yes		
CAPD fluid - microscopy and culture		Yes		
Cat scratch disease antibody		Yes		See Bartonella serology

Test	Tier One Test	Tier Two Test	Health Act or TB Act	Comment
Cervix swab microscopy & culture	Yes			See Genital Samples (below)
Chikungunya virus antibody		Yes	Notifiable	Consult the local microbiologist to discuss appropriate testing and interpretation of results. See also Note 1.
Chlamydia trachomatis culture [this test is used for forensic testing]		Yes		See Genital Samples (below)
Chlamydia trachomatis NAAT	Yes			See Genital Samples (below)
Chlamydomphila pneumoniae antibody		Yes		
Chlamydomphila pneumoniae NAAT		Yes		
Chlamydomphila psittaci antibody		Yes		
CLO test		Yes		
CMV IgG	Yes			
CMV IgG avidity		Yes		
CMV IgM	Yes			
CMV NAAT or viral load		Yes		
Coccidioidomycosis antibody		Yes		
Corneal scraping		Yes		
Corynebacterium diphtheriae culture	Yes		Notifiable - if toxin producing Corynebacteri a isolated	
Coxiella antibody		Yes	Voluntary notification	See Note 3
Coxsackie virus antibody		Yes		See Enterovirus antibody
Cryptococcus antigen		Yes		
Cryptosporidium & giardia antigen	Yes		Notifiable	GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
Cryptosporidium faecal antigen	Yes		Notifiable	GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
Crystals, fluid	Yes			See Aspirate - crystal examination

**T e P u n i A r o P u t e a - P l a n n i n g a n d F u n d i n g D i r e c t o r a t e**

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Test	Tier One Test	Tier Two Test	Health Act or TB Act	Comment
Crystals, urine	Yes			
CSF, microscopy and culture	Yes			
CSF, microscopy only	Yes			
Cysticercosis antibody		Yes	Notifiable	
Dark field microscopy		Yes		
Dengue virus antibody		Yes	Notifiable	Consult the local microbiologist to discuss appropriate testing and interpretation of results. See also Note 1.
Dengue virus antigen	Yes		Notifiable	
Ear swab, microscopy and culture	Yes			
EBV antibody other		Yes		
EBV EBNA IgG	Yes			
EBV NAAT or viral load		Yes		
EBV VCA IgG	Yes			
EBV VCA IgG avidity		Yes		
EBV VCA IgM	Yes			
Entamoeba histolytica antibody	Yes			
Entamoeba histolytica NAAT		Yes		
Enterobius vermicularis - microscopy	Yes			
Enterohaemorrhagic E. coli (EHEC) culture	Yes			GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
Enterohaemorrhagic E. coli (EHEC) toxin (verotoxin, shiga toxin) NAAT	Yes		Notifiable See note 4	GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
Enterohaemorrhagic E. coli (EHEC) toxin antigen (verotoxin, shiga toxin)	Yes		Notifiable See note 4	GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
Enterovirus antibody		Yes		This test is only undertaken by ESR
Enterovirus culture		Yes		
Enterovirus NAAT		Yes		

Test	Tier One Test	Tier Two Test	Health Act or TB Act	Comment
ESBL extended spectrum beta lactamase, bacteria culture (screen)		Yes		
Eye swab, microscopy and culture	Yes			
Faecal parasites stain	Yes			GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
Fascioliasis antibody		Yes		
Fungal microscopy & culture - skin / hair / nail	Yes			
Fungal susceptibility		Yes		
Galactomannan antigen		Yes		
Giardia faecal antigen	Yes		Notifiable	GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
Gram stain	Yes			
Group B streptococcus screen, culture	Yes			
Grp A streptococcus antigen	Yes			
Haemophilus influenzae antibody		Yes	Notifiable See comment	See Note 5 - Group B only is notifiable
Helicobacter pylori, culture and susceptibility		Yes		See tests for GI infections (below).
Helicobacter pylori faecal antigen	Yes			See tests for GI infections (below).
Hepatitis A IgG or total antibody	Yes See comment			GUIDELINE Not funded if for pre- or post vaccination or for Occupational Health pre-employment checks, a visa, or health insurance purposes.
Hepatitis A IgM	Yes		Notifiable	GUIDELINE
Hepatitis B core IgM	Yes		Notifiable See Note 6	GUIDELINE
Hepatitis B core total antibody	Yes			GUIDELINE
Hepatitis B e antibody		Yes	Notifiable see Note 6	GUIDELINE
Hepatitis B e antigen	Yes		Notifiable See Note 6 & 7	GUIDELINE

Test	Tier One Test	Tier Two Test	Health Act or TB Act	Comment
Hepatitis B surface antibody	Yes			GUIDELINE
Hepatitis B surface antigen	Yes		Notifiable See Note 6 & 7	GUIDELINE
Hepatitis B virus mutation (Anti viral resistance testing)		Yes		GUIDELINE
Hepatitis B virus NAAT or viral load	Yes		Notifiable See Note 6	GUIDELINE
Hepatitis C antibody	Yes		Notifiable See Note 6	GUIDELINE
Hepatitis C antigen	Yes		Notifiable See Note 7	GUIDELINE
Hepatitis C genotyping	Yes			GUIDELINE
<u>Hepatitis C marker - IL28B</u>		Yes		
Hepatitis C viral NAAT or viral load	Yes		Notifiable See note 6	GUIDELINE
Hepatitis D antibody	Yes		Notifiable	GUIDELINE
Hepatitis D NAAT		Yes	Notifiable	GUIDELINE
Hepatitis E antibody	Yes		Notifiable	GUIDELINE
Hepatitis E NAAT		Yes	Notifiable	GUIDELINE
Herpes simplex Type 1 & 2 antibody	Yes			See Genital Samples (below)
Herpes simplex virus culture		Yes		See Genital Samples (below)
Herpes simplex virus NAAT	Yes			See Genital Samples (below)
Heterophil antibodies e.g. monospot	Yes			See Monospot. This test is not undertaken in children.
HIV antibody +/- antigen	Yes		Notifiable See Note 8	
HIV NAAT or viral load		Yes	Notifiable See Note 8	
14-3-3 CSF protein test		Yes		
HPV high risk screen	Yes  See comment			Subject to NCSP Protocols See Genital Samples (below)
HTLV 1 and 2 antibody		Yes		
Human coronavirus NAAT		Yes	Notifiable	Only SARS is currently notifiable.

Test	Tier One Test	Tier Two Test	Health Act or TB Act	Comment
Human herpes virus type 6 antibody		Yes		
Human herpes virus type 6 NAAT		Yes		
Human herpes virus type 8 NAAT		Yes		
Hydatid antibody - confirmatory		Yes	Notifiable	
Hydatid antibody screen	Yes		Notifiable	
Influenza culture	Yes See comment	Yes		During an epidemic GPs may order this test under agreed protocols
Influenza NAAT	Yes See comment	Yes	Notifiable See note 9	During an epidemic GPs may order this test under agreed protocols
Influenza type A antibody	Yes			
Influenza type B antibody	Yes			
Interferon gamma release assay (IGRA) – (Quantiferon TB Gold)	Yes		See note 13	GUIDELINE
Japanese encephalitis virus antibody		Yes	Notifiable	
Legionella antibody	Yes		Notifiable Refer to the comment	A four-fold or greater rise in titre between acute and convalescent specimens is notifiable
Legionella culture	Yes		Notifiable	
Legionella NAAT		Yes	Notifiable	
Legionella pneumophila serogroup 1 urinary antigen		Yes	Notifiable	
Leishmania culture		Yes		
Leprosy smear		Yes	Notifiable	
Leptospira Ab (screen)	Yes		Notifiable	
Leptospira culture		Yes	Notifiable	
Leptospira NAAT		Yes	Notifiable	
Listeria, faeces culture	Yes			GUIDELINE See Note 10. See also tests for GI infections and the Guideline for Infectious Diarrhoea investigation (below). Blood cultures should be requested if listeriosis is considered.
Lyme disease antibody		Yes		See also Borrelia antibody
Lymphogranuloma venereum NAAT		Yes		

Test	Tier One Test	Tier Two Test	Health Act or TB Act	Comment
Mantoux test	Yes			GUIDELINE - Latent Tuberculosis Infection (LTBI) See also Tuberculin test
Measles IgG	Yes		Notifiable See note 11	
Measles IgM	Yes		Notifiable	
Measles NAAT	Yes		Notifiable	
Metapneumovirus NAAT		Yes		See Respiratory virus NAAT.
Molluscum contagiosum NAAT		Yes		
Monospot	Yes			See Heterophil antibodies
MRSA screen	Yes See comment	Yes		Undertaken to fulfil the requirements of a hospital Infection Prevention and Control Policy, when required.
Mumps IgG	Yes		Notifiable	
Mumps IgM	Yes		Notifiable	
Mumps NAAT		Yes	Notifiable	
Mycobacterium culture +/- acid fast stain	Yes		Notifiable	
Mycobacterium NAAT		Yes		
Mycobacterium tuberculosis complex NAAT (direct)		Yes	Notifiable	
Mycoplasma culture		Yes		
Mycoplasma genitalium NAAT		Yes		
Mycoplasma pneumoniae IgG	Yes			
Mycoplasma pneumoniae IgM	Yes			
Mycoplasma pneumoniae NAAT		Yes		
Nasal swab culture (staphylococcal screen and MRSA only)	Yes			
Neisseria gonorrhoeae culture +/- gram stain	Yes			See Genital Samples (below)
Neisseria gonorrhoeae NAAT	Yes			See Genital Samples (below)
Neisseria meningitidis NAAT		Yes	Notifiable	
Norovirus faecal antigen	Yes		Notifiable See note 4	GUIDELINE (Infectious Diarrhoea Investigation). See also

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Test	Tier One Test	Tier Two Test	Health Act or TB Act	Comment
				tests for GI infections (below).
Norovirus NAAT		Yes	Notifiable See note 4	GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
Orf Virus NAAT		Yes		
Ova, cysts, parasites - microscopy, concentration and stained film	Yes			GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
Papillomavirus NAAT		Yes		
Parainfluenza virus NAAT		Yes		See also Respiratory virus NAAT
Parasite identification	Yes			
Parvovirus IgG	Yes			
Parvovirus IgM	Yes			
Parvovirus NAAT		Yes		
Peri anal swab	Yes			
Placental swab	Yes			
Pleural fluid - microscopy & culture	Yes			See also Aspirate - microscopy & culture
Pneumococcal antigen (newer generation tests)		Yes		See also Streptococcus pneumoniae antigen
Pneumocystis immunofluorescent stain		Yes		
Pneumocystis jiroveci NAAT		Yes		
Polio antibody		Yes	Notifiable See note 12	
Polyoma virus NAAT		Yes		
Postmortem specimen culture		Yes	Notifiable	Notifiable if there has been identification of a notifiable organism e.g. TB, Neisseria meningitidis
Q fever antibody		Yes	Voluntary Notification See Note 3	See also Coxiella antibody
Quantiferon TB Gold	Yes		See Note 13	See Interferon Gamma Release Assay (IGRA)
Rabies virus antibody		Yes		

Test	Tier One Test	Tier Two Test	Health Act or TB Act	Comment
Rabies virus NAAT		Yes	Notifiable	
Respiratory virus antigen		Yes		
Respiratory virus culture		Yes		
Respiratory virus NAAT		Yes		
Rhinovirus culture		Yes		See also Respiratory virus culture
Rhinovirus NAAT		Yes		See also Respiratory virus NAAT
Rickettsia antibody		Yes	Notifiable	
Rickettsia NAAT		Yes	Notifiable	
Ross River virus antibody	Yes		Notifiable	Consult the local microbiologist to discuss appropriate testing and interpretation of results. See also Note 1.
Rotavirus +adenovirus antigen	Yes			GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
Rotavirus faecal antigen	Yes		Notifiable if associated with an outbreak See note 4	GUIDELINE (Infectious Diarrhoea Investigation). See also tests for GI infections (below).
RSV antibody		Yes		
Rubella IgG	Yes		Notifiable See note 11	
Rubella IgG avidity		Yes	Notifiable	
Rubella IgM	Yes		Notifiable	
Rubella NAAT		Yes	Notifiable	
Salmonella, Shigella, Yersinia, Campylobacter culture	Yes		Notifiable	GUIDELINE - Infectious Diarrhoea Investigation. See also tests for GI infections (below).
Scabies skin scraping & microscopy	Yes			
Schistosomal antibody	Yes			
Schistosome microscopy, urine or faeces	Yes			GUIDELINE - Infectious Diarrhoea Investigation. See also tests for GI infections (below).

Test	Tier One Test	Tier Two Test	Health Act or TB Act	Comment
Semen - fertility examination	Yes			
Semen - post vasectomy examination	Yes			
Semen culture		Yes		
Sindbis Virus antibody		Yes	Notifiable  See Note 1	See arboviral diseases in the Communicable Disease Control Manual 2012
Sputum - routine microscopy & culture (non-CF)	Yes			
Sputum culture (cystic fibrosis)	Yes			
Strongyloides - faeces culture	Yes			
Strongyloides antibody		Yes		
Swab (Skin, Wound, Pus) - microscopy & culture	Yes			
Syphilis - RPR	Yes			
Syphilis - TPHA or TPPA		Yes		See Syphilis
Syphilis Test (confirmatory test e.g. FTA-ABS or Western blot)		Yes		See Syphilis
Syphilis Treponemal Antibody Screen (e.g. EIA)	Yes			
Throat swab culture	Yes			
Tip specimen culture (intravascular catheter)	Yes			
Tissue, bacterial microscopy and culture	Yes			
Tissue, fungal culture	Yes			
Tissue, mycobacteria culture	Yes			
Toxocara antibody		Yes		
Toxoplasma gondii IgG	Yes			
Toxoplasma gondii IgG avidity		Yes		
Toxoplasma gondii IgM	Yes			
Toxoplasma gondii NAAT		Yes		
Trichinella antibody		Yes	Notifiable	
Trichomonas culture	Yes			See Genital Samples (below)
Trichomonas microscopy	Yes			See Genital Samples (below)
Trichomonas NAAT	Yes			
Trypanosoma cruzi antibody		Yes		
Tuberculin test (Mantoux)	Yes			GUIDELINE

Test	Tier One Test	Tier Two Test	Health Act or TB Act	Comment
				See also Mantoux test and the GUIDELINE for Tuberculosis/LTBI
Ureaplasma culture		Yes		
Urethral swab, microscopy & culture	Yes			See Genital Samples (below)
Urine, casts	Yes			
Urine, microscopy & culture	Yes			
Vaginal swab, microscopy & culture	Yes			See Genital Samples (below)
Vancomycin resistant enterococcus (VRE) screen		Yes		
Varicella Zoster IgG	Yes			
Varicella zoster culture		Yes		This has largely been replaced by NAAT testing
Varicella Zoster IgM	Yes			
Varicella Zoster NAAT	Yes			
VDRL CSF		Yes		See Syphilis
Vibrio, faeces culture	Yes			GUIDELINE - Infectious Diarrhoea Investigation. See also tests for GI infections (below).
Virus EM (electron microscopy)		Yes		
Viruses (culture) - all sites		Yes		This has largely been replaced by NAAT testing
West Nile Virus specific antibody		Yes	Notifiable See note 14 and Note 1	See arboviral diseases in the Communicable Disease Control Manual 2012
Yersinia antibody				Not funded

Tests for gastro-intestinal infections - (Refer to the Infectious Diarrhoea Guideline)	Tier One Test	Tier Two Test	Health Act or TB Act	Comment
Adenovirus faecal antigen	Yes			GUIDELINE
C. difficile antigen	Yes			GUIDELINE
C. difficile culture		Yes		GUIDELINE
C. difficile NAAT		Yes		GUIDELINE
C. difficile toxin A+B / GDH	Yes			GUIDELINE
C. difficile typing		Yes		

Cryptosporidium & giardia faecal antigen	Yes		Notifiable	GUIDELINE
Cryptosporidium faecal antigen	Yes		Notifiable	GUIDELINE
Enterohaemorrhagic E. coli (EHEC) culture	Yes			GUIDELINE
Enterohaemorrhagic E. coli (EHEC) toxin (verotoxin, shiga toxin) NAAT	Yes		Notifiable See note 4	GUIDELINE
Enterohaemorrhagic E. coli (EHEC) toxin antigen (verotoxin, shiga toxin)	Yes		Notifiable See note 4	GUIDELINE
Faecal parasites stain	Yes			GUIDELINE
Giardia faecal antigen	Yes		Notifiable	GUIDELINE
Helicobacter pylori culture and susceptibility		Yes		
Helicobacter pylori faecal antigen	Yes			
Listeria, faeces culture	Yes		Notifiable See note 10	GUIDELINE
Norovirus faecal antigen	Yes		Notifiable See note 4	GUIDELINE
Norovirus NAAT		Yes	Notifiable See note 4	GUIDELINE
Ova, cysts, parasites - microscopy, concentration and stained film	Yes			GUIDELINE
Rotavirus +adenovirus antigen	Yes			GUIDELINE
Rotavirus faecal antigen	Yes		Notifiable See note 4	GUIDELINE
Salmonella, Shigella, Yersinia, Campylobacter faeces culture	Yes		Notifiable	GUIDELINE
Schistosome microscopy , urine or faeces	Yes			GUIDELINE
Vibrio, faeces culture	Yes		Notifiable if vibrio parahaemolyticus or cholerae 01 or 0139	GUIDELINE

Syphilis	Tier One Test	Tier Two Test	Health Act or TB Act	Comments
Syphilis treponemal antibody screen (e.g. EIA)	Yes			
Syphilis - RPR		Yes		
Syphilis - TPHA or TPPA		Yes		

Syphilis test (confirmatory test e.g. FTA-ABS or Western blot)		Yes		
VDRL CSF		Yes		

Genital Samples	Tier One Test	Tier Two Test	Health Act or TB Act	Comments
Cervix swab, microscopy & culture	Yes			
Vaginal swab, microscopy & culture	Yes			
Urethral swab, microscopy & culture	Yes			
Chlamydia trachomatis culture		Yes		This test is used for forensic testing
Chlamydia trachomatis NAAT	Yes			
Neisseria gonorrhoeae NAAT	Yes			
Neisseria gonorrhoeae culture +/- gram stain	Yes			
Herpes simplex Type 1 & 2 antibody	Yes			
Herpes simplex virus culture		Yes		
Herpes Simplex Virus NAAT	Yes			
Trichomonas culture	Yes			
Trichomonas microscopy	Yes			
HPV high risk screen	Yes  See comment			Subject to NCSP Protocols

## NOTES

<b>Note 1:</b>	The Communicable Disease Control Manual (2012) states closely related arboviruses can be clinically indistinguishable and exhibit serologic cross-reactivity. Therefore, positive results of serologic tests should be investigated further by cross-neutralisation methods using a battery of viruses relevant to the region where the case was exposed.
<b>Note 2:</b>	The Communicable Disease Control Manual (2012) includes PCR and positive culture for a confirmed case of pertussis, but a high IgA antibody or a significant increase in antibody level between paired sera will be classed as a probable case.
<b>Note 3:</b>	Q fever is not currently listed on the Schedule but practitioners are requested to notify this with the informed consent of the patient. Their name and contact details and some details will be provided by the responsible medical practitioner to the local Medical Officer of Health for public health follow-up and inclusion in national infectious disease statistics.

<b>Note 4:</b>	Outbreaks of acute gastroenteritis are notifiable. The most common cause is Norovirus. Norovirus testing is normally only indicated for outbreak investigations and requires an 'outbreak testing number' from the local Public health unit. Rotavirus is often isolated in infants but usually these are sporadic cases and so not notifiable.  EHEC if isolated with evidence of Shiga toxin as a cause of acute gastroenteritis is a notifiable condition.
<b>Note 5:</b>	Haemophilus influenzae Group B is a notifiable disease, but the other serogroups are not notifiable.
<b>Note 6:</b>	Acute Hepatitis B and C (including documented hep C seroconversion within 12 months) are notifiable diseases but carriage is currently not notifiable.
<b>Note 7:</b>	Neonatal hepatitis B is notifiable - refer to pg 96 of the Immunisation Handbook. Babies of HBsAg positive mothers are to be notified at birth, and with the mother's consent given hepatitis B immunoglobulin and hepatitis B vaccine shortly after birth.
<b>Note 8:</b>	HIV carriage is not notifiable but clinical AIDS is notifiable anonymously to the Medical Officer of Health.
<b>Note 9</b>	Non- seasonal influenza capable of transmission between humans is notifiable when advised by the Director of Public health at the Ministry of health. This will be in response to a novel transmissible strain with pandemic potential.
<b>Note 10</b>	The Communicable Disease Control Manual 2012 states that isolation of listeria monocytogenes is from a normally sterile site, including the foetal gastrointestinal tract.
<b>Note 11</b>	Positive IgG is notifiable when there is a significant increase in anti-rubella or measles IgG between paired sera tested at the same laboratory.
<b>Note 12</b>	Acute poliomyelitis is notifiable but the serology may be required to test for immunity and would not be used as a diagnostic test for public health purposes.
<b>Note 13:</b>	An Interferon gamma release assay (IGRA) positive result is only notifiable if the person is suspected to have active tuberculosis disease.
<b>Note 14</b>	West Nile Virus is an Arboviral disease and so is notifiable.

## IMMUNOLOGY TESTS

This test list has been developed using the following categories.

- Tests not funded
- Allergy
- ANCA
- Coeliac Disease – Serological, genetic tests
- Complement
- Infection
- Immunodeficiency

### NOTES:

<b>Tier One Test</b>	Refer to the Definitions
<b>Tier Two Test</b>	Refer to the Definitions

### Occupational Health / Travel / Sport / Visa / Insurance Screening Tests

Screening tests in the following categories are *not funded*:

- for travel or occupational health
- providing information for insurance or visa applications
- testing required by some sports groups
- for testing pre or post vaccination

Tier 2 tests in this category do not require authorisation if the clinician ordering the test does not have the appropriate vocational registration or credentialing.

### Immunology Tests - by group

<b>TESTS NOT FUNDED</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
Gliadin antibody	N/A	N/A	Not funded
Adherence (to plastic)	N/A	N/A	Not funded
(native) Anti-gliadin antibody	N/A	N/A	Not funded

<b>ALLERGY</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
Aspergillus precipitins		Yes	
Avian precipitins		Yes	
ECP / Eosinophil cationic protein		Yes	
Farmer's lung antibodies [M. faeni]		Yes	
Flow cytometry for assessment of allergy		Yes	
HLA B5701	Yes		
Intradermal tests		Yes	
ISAC component resolved diagnosis		Yes	
Serum tryptase	Yes		
Skin prick tests	Yes		
Specific IgE testing	Yes		

<b>ALLERGY</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
Sperm antibodies, serum		Yes	
Sperm antibody, semen		Yes	
Total IgE	Yes		
Venom specific IgE inhibition		Yes	
<b>AUTOIMMUNE</b>			
<b>ANCA</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
ANCA / ANA / Antinuclear antibody	Yes		GUIDELINE
ANA titre & pattern	Yes		
Anti-myeloperoxidase antibodies (Myeloperoxidase antibodies)	Yes		
Proteinase 3 antibodies	Yes		
<b>COELIAC DISEASE - SEROLOGICAL, GENETIC TESTS</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
HLA DQ2 and HLA DQ8	Yes		
IgA EMA (Endomysial antibodies)	Yes		
IgA tissue transglutaminase (TTG) Antibodies	Yes		
IgG tissue transglutaminase (TTG) Antibodies	Yes		
IgA anti-DGP/MGP (deaminated/modified gliadin peptide)	Yes		
IgG anti-DGP	Yes		
Serum IgA	Yes		
Reticulin antibodies		Yes	
Acetylcholine receptor antibodies		Yes	

Test	Tier One Test	Tier Two Test	Comments
Adrenal antibodies		Yes	
Anti-F-actin		Yes	
Anti C1q autoantibodies		Yes	
Anti GAD		Yes	
Anti NMO IgG antibodies		Yes	
Anti-retinal antibodies (Retinal antibodies/ Anti-retinal auto-antibodies)		Yes	
Anti saccharomyces cerevisiae antibodies		Yes	
Anticardiolipin antibody	Yes		
Antiganglio nicotine AchR antibodies		Yes	
Antineuronal antibodies (neuronal antibodies)		Yes	
Anti-NMDA receptor antibody (Anti-NMDA)		Yes	
Anti-saccharomyces cerevisiae antibodies (ASCA)		Yes	
Anti-VGKC antibodies		Yes	
Beta-2-glycoprotein 1 antibodies		Yes	
C1q		Yes	
Cardiac autoantibody		Yes	
Chromatin antibodies		Yes	
Citrullinated autoantibodies (CCP) / Anti-cyclic citrullinated peptide (anti-CCP) antibodies	Yes		
Double stranded DNA antibody	Yes		
ENA identification	Yes		
ENA screen	Yes		
GADA (Glutamic acid decarboxylase antibodies)		Yes	
Ganglioside antibodies (Anti-GQ1B antibody)		Yes	-
Glomerular basement membrane (GBM) antibodies		Yes	
GM1 antibodies (Anti-monosialo-ganglioside GM1 antibodies)		Yes	
GM2-gangliosidosis type 1 (Tay Sachs) [White cell enzymes]		Yes	
Histone antibodies		Yes	
HLA B27	Yes		Refer to the GENETICS GUIDELINE
IA2 antibodies		Yes	
IgG subclasses		Yes	

**T e P u n i A r o P u t e a - P l a n n i n g a n d F u n d i n g D i r e c t o r a t e**

Hawke's Bay District Health Board

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Corporate Office, Cnr Omahu Road and McLeod Street, Private Bag 9014, Hastings 4156, New Zealand

Test	Tier One Test	Tier Two Test	Comments
Intrinsic factor antibodies	Yes		
Islet cell autoantibody		Yes	
Liver/Kidney antibodies	Yes		
MAG (Myelin associated G glycoprotein) antibodies / MAG IgM auto antibodies		Yes	
Mitochondria antibody	Yes		
Muscle specific kinase (MUSK) antibodies		Yes	
Myositis antibodies		Yes	
Neuromyelitis optica antibodies (aquaporin 4 antibodies)		Yes	-
Ovarian autoantibody		Yes	
Paraneoplastic pemphigus autoantibodies		Yes	
Parietal cell antibody (Gastric parietal cell auto-antibodies)	Yes		
PM-Scl antibodies		Yes	
Rheumatoid factor	Yes		
Salivary gland antibody		Yes	
Skeletal muscle auto-antibodies		Yes	
Skin autoantibody (Salt split skin antibodies)		Yes	
Smooth muscle antibody	Yes		
Soluble liver antibody		Yes	
Sulfatide autoantibody		Yes	
Thyroid antibody	Yes		
Tryptase	Yes		
TSH receptor antibodies		Yes	
Voltage-gated calcium channel antibodies		Yes	

COMPLEMENT	Tier One Test	Tier Two Test	Comments
Alternative pathway activity / AH50		Yes	
C1 inhibitor function		Yes	
C1 inhibitor level		Yes	
C1q binding assay		Yes	
C2		Yes	
C3	Yes		
C3 breakdown products		Yes	
C3 nephritic factor		Yes	
C4	Yes		
C5		Yes	
C6		Yes	
C7		Yes	
C8		Yes	
C9		Yes	
Complement genotyping		Yes	
Classical pathway activity / CH50 / Total haemolytic complement (THC)		Yes	
Factor H, I, CD46 Complement [Complement Factor H]		Yes	
Mannose binding lectin pathway (MBL)		Yes	

INFECTION	Tier One Test	Tier Two Test	Comments
C. trachomatis Ag	Yes		
Echinococcus antibody	Yes		
Pneumovax 23 antibody response	Yes		
Streptococcus antibody	Yes		
T. pallidum antibody (IF)	Yes		
Taenia antibodies [Taenia solium serology]		Yes	
Vaccine challenge response		Yes	

<b>IMMUNODEFICIENCY</b>	<b>Tier One Test</b>	<b>Tier Two Test</b>	<b>Comments</b>
CD40 ligand expression		Yes	
Genetic testing for autoinflammatory disorders		Yes	
Genetic testing for primary immunodeficiency		Yes	
H Influenza type2 antibody		Yes	
H Influenza type2 vaccine response		Yes	
IgA	Yes		
IgG	Yes		
IgG subclasses		Yes	
IgM	Yes		
Immunodeficiency lymphocyte markers (subsets)		Yes	
Immunoglobulins	Yes		
Lymphocyte proliferation - antigen specific		Yes	
Lymphocyte proliferation - mitogen		Yes	
Lymphocyte subsets	Yes		
Natural killer cell assay		Yes	
NBT assay		Yes	
Neutrophil chemotaxis		Yes	
Phagocytosis		Yes	
Pneumococcal antibodies (pre+post)		Yes	
Pneumococcal antibodies (one off)		Yes	
Pneumococcal serotype specific antibodies		Yes	
Tetanus antibody - Pre &post vaccination		Yes	
Tetanus antibody levels		Yes	

*Immunology Tests – alphabetical order*

Test	Tier One Test	Tier Two Test	Comments
Acetylcholine receptor antibodies		Yes	
Adherence (to plastic)	N/A	N/A	Not funded
Adrenal antibodies		Yes	
Alternative pathway activity / AH50		Yes	
ANA titre & pattern	Yes		
ANCA / ANA / Antinuclear antibody	Yes		
Anti C1q autoantibodies		Yes	
Anti GAD		Yes	
Anti NMO IgG antibodies		Yes	
Anti saccharomyces cerevisiae antibodies		Yes	
Anticardiolipin antibody	Yes		
Anti-F-actin		Yes	
Antiganglio nicotine AchR antibodies		Yes	
Anti-myeloperoxidase antibodies (Myeloperoxidase antibodies)	Yes		
Antineuronal antibodies (neuronal antibodies)		Yes	
Anti-NMDA receptor antibody (Anti-NMDA)		Yes	
Anti-retinal antibodies (Retinal antibodies/ Anti-retinal auto-antibodies)		Yes	
Anti-saccharomyces cerevisiae antibodies (ASCA)		Yes	
Anti-VGKC antibodies		Yes	
Aspergillus precipitins		Yes	
Avian precipitins		Yes	
Beta-2-glycoprotein 1 antibodies		Yes	
C. trachomatis Ag	Yes		
C1 inhibitor function		Yes	
C1 inhibitor level		Yes	
C1q		Yes	
C1q binding assay		Yes	
C2		Yes	
C3	Yes		
C3 breakdown products		Yes	

Test	Tier One Test	Tier Two Test	Comments
C3 nephritic factor		Yes	
C4	Yes		
C5		Yes	
C6		Yes	
C7		Yes	
C8		Yes	
C9		Yes	
Cardiac autoantibody		Yes	
CD40 ligand expression		Yes	
Chromatin antibodies		Yes	
Citrullinated autoantibodies (CCP) / Anti-cyclic citrullinated peptide (anti-CCP) antibodies	Yes		
Classical pathway activity / CH50 / Total haemolytic complement (THC)		Yes	
Complement genotyping		Yes	
Double stranded DNA antibody	Yes		
Echinococcus antibody	Yes		
ECP / Eosinophil cationic protein		Yes	
ENA identification	Yes		
ENA screen	Yes		
Factor H, I, CD46 Complement [Complement Factor H]		Yes	
Farmer's lung antibodies [M. faeni]		Yes	
Flow cytometry for assessment of allergy		Yes	
GADA (Glutamic acid decarboxylase antibodies)		Yes	
Ganglioside antibodies (Anti-GQ1B antibody)		Yes	
Genetic testing for autoinflammatory disorders		Yes	
Genetic testing for primary immunodeficiency		Yes	
Gliadin antibody	N/A	N/A	Not funded
Glomerular basement membrane (GBM) antibodies		Yes	
GM1 antibodies (Anti-monosialo-ganglioside GM1 antibodies)		Yes	
GM2-gangliosidosis type 1 (Tay Sachs) [White cell enzymes]		Yes	
H Influenza type2 antibody		Yes	

## Te Puni Aro Putea - Planning and Funding Directorate

Hawke's Bay District Health Board

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Corporate Office, Cnr Omaha Road and McLeod Street, Private Bag 9014, Hastings 4156, New Zealand

Test	Tier One Test	Tier Two Test	Comments
H Influenza type2 vaccine response		Yes	
Histone antibodies		Yes	
HLA B27	Yes		Refer to the GENETICS GUIDELINE
HLA B5701	Yes		
HLA DQ2 and HLA DQ8	Yes		
IA2 antibodies		Yes	
IgA	Yes		
IgA anti-DGP/MGP (deaminated/modified gliadin peptide)	Yes		
IgA EMA (Endomysial antibodies)	Yes		
IgA tissue transglutaminase (TTG) Antibodies	Yes		
IgG	Yes		
IgG anti-DGP	Yes		
IgG subclasses		Yes	
IgG subclasses		Yes	
IgG tissue transglutaminase (TTG) Antibodies	Yes		
IgM	Yes		
Immunodeficiency lymphocyte markers (subsets)		Yes	
Immunoglobulins	Yes		
Intradermal tests		Yes	
Intrinsic factor antibodies	Yes		
ISAC component resolved diagnosis		Yes	
Islet cell autoantibody		Yes	
Liver/Kidney antibodies	Yes		
Lymphocyte proliferation - antigen specific		Yes	
Lymphocyte proliferation - mitogen		Yes	
Lymphocyte subsets	Yes		
MAG (Myelin associated G glycoprotein) antibodies / MAG IgM auto antibodies		Yes	
Mannose binding lectin pathway (MBL)		Yes	
Mitochondria antibody	Yes		

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Test	Tier One Test	Tier Two Test	Comments
Muscle specific kinase (MUSK) antibodies		Yes	
Myositis antibodies		Yes	
(native) Anti-gliadin antibody	N/A	N/A	Not funded
Natural killer cell assay		Yes	
NBT assay		Yes	
Neuromyelitis optica antibodies (aquaporin 4 antibodies)		Yes	-
Neutrophil chemotaxis		Yes	
Ovarian autoantibody		Yes	
Paraneoplastic pemphigus autoantibodies		Yes	
Parietal cell antibody (Gastric parietal cell auto-antibodies)	Yes		
Phagocytosis		Yes	
PM-Scl antibodies		Yes	
Pneumococcal antibodies (pre+post)		Yes	
Pneumococcal antibodies (one off)		Yes	
Pneumococcal serotype specific antibodies		Yes	
Pneumovax 23 antibody response	Yes		
Proteinase 3 antibodies	Yes		
Reticulin antibodies		Yes	
Rheumatoid factor	Yes		
Salivary gland antibody		Yes	
Serum IgA	Yes		
Serum tryptase	Yes		
Skeletal muscle auto-antibodies		Yes	
Skin autoantibody (Salt split skin antibodies)		Yes	
Skin prick tests	Yes		
Smooth muscle antibody	Yes		
Soluble liver antibody		Yes	
Specific IgE testing	Yes		
Sperm antibodies, serum		Yes	
Sperm antibody, semen		Yes	
Streptococcus antibody	Yes		

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Test	Tier One Test	Tier Two Test	Comments
Sulfatide autoantibody		Yes	
T. pallidum antibody (IF)	Yes		
Taenia antibodies [Taenia solium serology]		Yes	
Tetanus antibody - Pre & post vaccination		Yes	
Tetanus antibody levels		Yes	
Thyroid antibody	Yes		
Total IgE	Yes		
Tryptase	Yes		
TSH receptor antibodies		Yes	
Vaccine challenge response		Yes	
Venom specific IgE inhibition		Yes	
Voltage-gated calcium channel antibodies		Yes	

## Genetic Testing

Test	Tier One Test	Tier Two Test	Comments
HFE genotyping/ Haemochromatosis gene including CYS282TYR	Yes  Able to be ordered according to local referral guidelines	Yes  - Gastroenterologist - Haematologist - Internal medicine specialist	HFE genotyping should only be initiated if there is biochemical evidence of abnormal iron metabolism <ul style="list-style-type: none"> <li>- elevated transferrin-iron (45% or higher)</li> <li>- elevated serum ferritin concentration (&gt;300 ng/ml in males and &gt;200 ng/ml in females)</li> </ul> <p>Molecular testing of unaffected individuals can only be undertaken on the recommendation of a relevant specialist. Familial molecular testing is not recommended (discuss with GHSNZ).</p> <p>Testing for the CYS282TYR mutation is indicated in European populations only as this mutation has not been found in other ethnic groups.</p> <p><u><a href="#">Link for further information</a></u> Hereditary haemochromatosis</p> <p><u><a href="http://www.genetics.edu.au/Publications-and-Resources/Genetics-Fact-Sheets/FactSheet36HereditaryHaemochromatosis.pdf">http://www.genetics.edu.au/Publications-and-Resources/Genetics-Fact-Sheets/FactSheet36HereditaryHaemochromatosis.pdf</a></u></p>
Mitochondrial disorders (for targeted mutation analysis) – including Lebers Hereditary optic neuropathy		Yes  - Paediatrician - Ophthalmologist - Metabolic - Internal medicine specialist - Neurologist - Endocrinologist	<ul style="list-style-type: none"> <li>- The appropriate clinical information for testing is provided</li> <li>- Buccal and urine samples are needed [Refer to the Reference Laboratory for specimen collection information]</li> </ul> <p>If the result is negative consult with GHSNZ or the National Metabolic Service regarding further detailed analysis.</p>
HSMN – IA		Yes  - Neurologist	The appropriate clinical information for testing needs to be provided
Rhett syndrome (MECP2)		Yes  - Paediatrician	The appropriate clinical information for testing needs to be provided.  Discuss with the reference laboratory.
Non-syndromic hearing loss		Yes  - Paediatrician - Otolaryngologist - Cochlear Implant programme	Refer to the National Newborn Hearing Screening referral guidelines  <u><a href="http://www.nsu.govt.nz/current-screening-programmes/2861.aspx">www.nsu.govt.nz/current-screening-programmes/2861.aspx</a></u>

Test	Tier One Test	Tier Two Test	Comments
Huntington disease		Yes  - Neurologist - Geriatrician - Internal medicine specialist	<ul style="list-style-type: none"> <li>- Signed consent is needed</li> <li>- The family should be referred to GHSNZ for genetic counselling if the test is positive.</li> <li>- No pre-symptomatic testing should be undertaken except through genetics referral</li> </ul>
Myotonic dystrophy		Yes  - Neurologist - Internal medicine specialist	<ul style="list-style-type: none"> <li>- Signed consent for this test is needed.</li> <li>- The referring doctor needs to be made aware that a positive result suggests the patient is at risk of multiple systems disease, and he/she should be referred to other relevant clinicians and to GHSNZ.</li> </ul>
Scoline apnoea		Yes  - Anaesthetist	<ul style="list-style-type: none"> <li>- An anaesthetist that specialises in allergy should refer for this test</li> <li>- If the test is positive the affected person needs a management plan</li> </ul>
Spinal muscular atrophy		Yes  - Paediatrician - Neurologist	<ul style="list-style-type: none"> <li>- Signed consent for this test is needed.</li> <li>- If the test is positive in the index case, the family should be referred to GHSNZ</li> </ul>
Spino cerebellar ataxia (SCA)		Yes  - Neurologist - Internal medicine specialist	<ul style="list-style-type: none"> <li>- Signed consent is needed</li> <li>- The family should be referred to GHSNZ for genetic counselling if the test is positive.</li> </ul>
Cystic fibrosis CFTR genotyping		Yes  - Paediatrician - Internal medicine specialist - Obstetrician / Gynaecologist	<p>Newborn metabolic screening for CF has been offered in NZ for many years. Most affected children are identified by the screening program, and the genotyping is completed within the context of the management of CF by the Regional CF Paediatricians.</p> <p>Affected individuals should be referred to a relevant specialist. Families are referred to GHSNZ within the CF Management program, and family genotyping is addressed within that referral in most instances.</p> <p><b>Carrier testing</b> is undertaken for the purposes of reproductive decisions. Testing may be arranged by a GP after discussion with a relevant specialist.</p> <p><b>Gene sequencing</b> should only be undertaken at the request of a relevant specialist.</p> <p><u>Link for further information:</u></p> <p><a href="http://www.genetics.edu.au/pdf/factsheets/fs33.pdf">http://www.genetics.edu.au/pdf/factsheets/fs33.pdf</a></p>

Test	Tier One Test	Tier Two Test	Comments
Other conditions (various, not a comprehensive list)		Yes  - Various clinicians	Periodic fevers Motor neurone disease Alzheimers Dementia Craniosynostoses LQTS/HCM Consult with a local tertiary laboratory or GHSNZ.
Familial cancers and rare cancer syndromes		Yes  - Oncologist - Internal medicine specialist - Surgeon	Consult with GHSNZ.

## Genetic Biochemistry

Test	Tier One Test	Tier Two Test	Comments
LDL receptor apolipoprotein B100		Yes  - Internal medicine specialist - Chemical pathologist	Prior biochemistry must be abnormal.
Gilbert syndrome: UGT <sub>1A1</sub> genotyping		Yes  - Internal medicine specialist - Gastroenterologist (including a paediatric gastroenterologist) - Hepatologist	This test is undertaken on evidence of a high bilirubin and/or jaundice in the absence of elevated transaminases and to test for Criggler-Najjar types 1 and 2 disease.
Apolipoprotein E genotyping (apoE)		Yes  - Specialist lipid clinic - Neurologist - Psychiatrist - Geriatrician - Geneticist - Cardiologist - Chemical pathologist	Refer to the <b>GUIDELINE</b>

## Genetic Haematology

Test	Tier One Test	Tier Two Test	Comments
Haemophilia A & B		Yes  - Paediatrician - Haematologist	Refer to Haematology Tests (Factor VIII and Factor IX). These tests are restricted to ordering by a relevant specialist. Discussion with a haematologist, GHSNZ or a local tertiary laboratory is recommended.
Thrombophilia (inherited)	Yes  See comment	Yes	Refer to Haematology Tests and also the <b>GUIDELINE</b> [Thrombophilia (inherited)].  Thrombophilia screening tests are a Tier One Test in the Haematology Test List. However, if there is an index case in the family, individual genetic tests (e.g. Antithrombin, or Protein C) are restricted to ordering by a haematologist or relevant specialist as counselling may be required prior to testing other family members.
Factor V Leiden		Yes  - Haematologist	Refer to Haematology Tests and also the <b>GUIDELINE</b> (Thrombophilia screen). Factor V tests are restricted to ordering by a relevant specialist.
Haemoglobinopathies [Alpha thalassaemia Beta thalassaemia]	Yes  See comment	Yes  - Paediatrician - Haematologist	Refer to Haematology Tests and also the <b>GUIDELINE</b> (Haemoglobinopathy Investigations).  Haemoglobinopathy screening tests are a Tier One test in the Haematology Test list, but tests for genetic testing are restricted to ordering by a relevant specialist. Gene Deletion Analysis should only be undertaken after evidence of abnormal electrophoresis or a defined family history. Recommend discussion with haematology.  Gene sequencing should only be undertaken at the request of a haematologist.

## Genetic Immunology

Test	Tier One Test	Tier Two Test	Comments
HLA-B5701		Yes  - Immunologist - HIV medicine specialist - Infectious diseases immunologist - Sexual health	

HLA-B27 (Ankylosing spondylitis)	Yes	-	<p>Ankylosing spondylitis is part of a group of related disorders known as spondyloarthropathies. Ankylosing spondylitis is caused by a combination of genetic and environmental factors, most of which have not yet been identified. Diagnosis of ankylosing spondylitis is based on abnormalities identified on spinal radiology.</p> <p>Susceptibility to ankylosing spondylitis can be conferred by variation in the <i>HLA-B27</i> allele. However, inheriting a genetic variation linked to ankylosing spondylitis does NOT mean that a person will develop the condition. For example, about 80 % of children who inherit <i>HLA-B27</i> from a parent <i>do not develop the disorder</i>.</p> <p>HLA B27 analysis contributes to the assessment of the patient, and should be interpreted within the overall context.</p>
Coeliac disease -HLA-DQ2/DQ8		<p>Yes</p> <ul style="list-style-type: none"> <li>- Paediatrician</li> <li>- Immunologist</li> <li>- Gastroenterologist</li> </ul>	

## ANATOMIC PATHOLOGY TESTS

### NOTES:

<b>Tier One Test</b>	Refer to the Definitions.
<b>Tier Two Test</b>	Refer to the Definitions

## Histology

Site	Specimen Type	Request
Specific organ, site, side	Shave biopsy	Routine surgical pathology processing (plus IHC if indicated)
	Punch biopsy	
	Cell block from FNA specimen	Sites with special requirements <ul style="list-style-type: none"> <li>- renal (routine IF, EM)</li> <li>- bone (for metabolic disease)</li> <li>- muscle (routine, enzyme histochemistry, EM)</li> <li>- nerve (routine, special techniques, EM)</li> <li>- other(specify)</li> </ul>
	Frozen section	
	Incisional biopsy	
	Excision biopsy	
	Wide local excision	Immunohistochemistry Studies (e.g. for ER, PR, cerbB-2 in breast carcinoma)
		Immunofluorescence Studies (e.g. skin for Inflammatory dermatitis)
		EM Studies (e.g. CADASIL)

## Te Puni Aro Putea - Planning and Funding Directorate

Hawke's Bay District Health Board

Telephone (06) 878 8109 extension 4617; Fax 06 878 1374 Email: Di.Vicary@hawkesbaydhb.govt.nz; [www.hawkesbay.health.nz](http://www.hawkesbay.health.nz)  
Corporate Office, Cnr Omaha Road and McLeod Street, Private Bag 9014, Hastings 4156, New Zealand

	Partial organectomy +/- LN (Give specific description)  Complete organectomy +/- LN (Give specific description)	Cancer Mutational Testing (e.g. EGFR, BRAF)
		Second Opinion Referral
		Multi-Disciplinary Meeting Presentation
		Return of Specimen to patient

## Gynaecological Cytology

Site	Specimen Type	Request	Tier One Test	Tier Two Test	Other Clinicians able to order
Cervix	Conventional	Cytology	Yes		Midwives and Registered Smear Takers
Vaginal vault	LBC				
Vaginal wall		HPV high risk screen	Subject to NCSP guidelines for High risk HPV testing		Midwives and Registered Smear Takers
Vulva					
Other (Specific site description)		Other(Specific request description)		Yes	

## Non Gynaecological Cytology

Site	Specimen Type	Request	Tier One Test	Tier Two Test
Specific Organ, site, side	Fluid	Routine cytology	Yes	
	Cyst aspirate			
	FNA	Intra-operative cytology		Yes
	Washing			
	BAL	Other (Specific request description)	Yes	
	Smear			
	Urine			
	Sputum			
	Imprint			
	Other(Specific specimen)			

## MIDWIFE / LEAD MATERNITY CARER TESTS

Tests able to be ordered by a midwife / LMC are listed below.

CHEMICAL PATHOLOGY	Midwife	Comment
Albumin	Midwife	
Albumin:creatinine ratio	Midwife	
Alkaline phosphatase	Midwife	
ALT, plasma/serum	Midwife	
AST	Midwife	
Bile salts, miscellaneous	Midwife	
Bile salts, serum	Midwife	
Bilirubin	Midwife	
Bilirubin (and unconjugated)	Midwife	
Creatinine	Midwife	
Creatinine clearance	Midwife	
CRP - C-reactive protein	Midwife	
Ferritin, serum	Midwife	
Folate	Midwife	
Gestational diabetes screen	Midwife	
GGT, serum	Midwife	
Glucose	Midwife	
Glucose (fasting)	Midwife	
Glucose tolerance test, oral	Midwife	
HbA1c	Midwife	
hCG	Midwife	
hCG (pregnancy)	Midwife	
hCG urine (pregnancy)	Midwife	
LDH, plasma	Midwife	
Neonatal bilirubin	Midwife	
Potassium	Midwife	
Protein creatinine ratio	Midwife	
Proteins total, serum	Midwife	
Protein, urine	Midwife	
Protein, urine 24hr	Midwife	
Sodium, plasma	Midwife	

**T e P u n i A r o P u t e a - P l a n n i n g a n d F u n d i n g D i r e c t o r a t e**

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Telephone (06) 878 8109 extension 4617; Fax 06 878 1374 Email: Di.Vicary@hawkesbaydhsb.govt.nz; [www.hawkesbay.health.nz](http://www.hawkesbay.health.nz)

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CHEMICAL PATHOLOGY	Midwife	Comment
Sodium and Potassium	Midwife	
T4, free	Midwife	
Thyroid stimulating hormone , serum (TSH)	Midwife	
Urate or uric acid, serum	Midwife	
Vitamin B12	Midwife	

HAEMATOLOGY	Midwife	Comments
1st antenatal screen (including HIV)	Midwife	
Antenatal antibodies including Coombs	Midwife	
Subsequent antenatal screen	Midwife	
CBC plus differential	Midwife	
Neonatal group	Midwife	
Direct antiglobulin test (DAT ) - previously called Coombs	Midwife	
Coagulation profile (excluding bleeding time) <ul style="list-style-type: none"> <li>– Prothrombin time</li> <li>– Activated partial thromboplastin clotting time (APTT)</li> <li>– Complete blood count (CBC)</li> </ul>	Midwife	
Coagulation profile (including bleeding time) - or Platelet Function Analyser( PFA) <ul style="list-style-type: none"> <li>– Bleeding time</li> <li>– Prothrombin time</li> <li>– Activated partial thromboplastin clotting time (APTT)</li> <li>– Complete blood count (CBC)</li> </ul>	Midwife	
Kleihauer test	Midwife	
ABO and Rh group	Midwife	
ABO/Rh newborn	Midwife	
DAT broad spectrum	Midwife	
Red cell antibody screen	Midwife	
Rh D Ab (titre)	Midwife	
Rh phenotype	Midwife	
MICROBIOLOGY	Midwife	Comments
Aspirate - microscopy & culture	Midwife	
Blood culture - adult or paediatric	Midwife	
Bordetella pertussis culture	Midwife	A referral guideline is available
Bordetella pertussis NAAT	Midwife	A referral guideline is available

Cervix swab microscopy & culture	Midwife	
Chlamydia trachomatis NAAT	Midwife	
CMV IgG	Midwife	
CMV IgM	Midwife	
Ear swab - microscopy and culture	Midwife	
Enterohaemorrhagic E. coli (EHEC) culture	Midwife	
Eye swab - microscopy and culture	Midwife	
Group B streptococcus screen - culture	Midwife	
Hepatitis B e antigen	Midwife	A referral guideline is available
Hepatitis B surface antibody	Midwife	A referral guideline is available
Hepatitis B surface antigen	Midwife	A referral guideline is available
Hepatitis B virus NAAT or viral load	Midwife	A referral guideline is available – Midwives are only able to order for pregnant women with positive surface antigen tests
Hepatitis C antibody	Midwife	A referral guideline is available
Herpes simplex Type 1 & 2 antibody	Midwife	
Herpes simplex virus NAAT	Midwife	
HIV antibody +/- antigen	Midwife	
HPV high risk screen	Midwife	Subject to NCSP Protocols
Listeria, faeces culture	Midwife	A referral guideline is available. Refer to 'Infectious Diarrhoea Investigation'.
Measles IgG	Midwife	
Measles IgM	Midwife	
MRSA screen	Midwife	
Nasal swab culture (Staphylococcal screen and MRSA only)	Midwife	
Neisseria gonorrhoeae culture +/- gram stain	Midwife	
Neisseria gonorrhoeae NAAT	Midwife	
Parvovirus IgG	Midwife	
Parvovirus IgM	Midwife	
Peri-anal swab	Midwife	
Placental swab	Midwife	
Rubella IgG	Midwife	
Rubella IgM	Midwife	

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Salmonella, Shigella, Yersinia, Campylobacter faeces culture			Midwife	Request when an infectious cause of diarrhoea is suspected. These pathogens can be transmitted during the birthing process (including water births). A referral guideline is available ('Infectious Diarrhoea Investigation').
Swab (skin, wound, pus) - microscopy & culture			Midwife	
Syphilis -RPR			Midwife	
Syphilis treponemal antibody screen (e.g. EIA)			Midwife	
Tissue - bacterial microscopy and culture			Midwife	
Toxoplasma gondii IgG			Midwife	
Toxoplasma gondii IgM			Midwife	
Trichomonas culture			Midwife	
Trichomonas microscopy			Midwife	
Urethral swab - microscopy & culture			Midwife	
Urine - microscopy & culture			Midwife	
Vaginal swab - microscopy & culture			Midwife	
Varicella zoster IgG			Midwife	
Varicella zoster IgM			Midwife	
Vibrio, faeces culture			Midwife	A referral guideline is available. Refer to 'Infectious Diarrhoea Investigation'
<b>ANATOMIC PATHOLOGY (Gynaecological cytology)</b>			<b>Midwife</b>	<b>Comments</b>
Cervix	Conventional LBC	Cytology	Midwives and Registered Smear Takers subject to NCSP protocols	
Vaginal vault				
Vaginal wall				
Vulva				
Other (Specific site description)		Hr HPV PCR	Midwives and Registered Smear Takers subject to NCSP protocols	

## Appendix B



25 January 2012

### Vitamin D Testing

The Laboratory Committee of the Hawke's Bay Clinical Council has reviewed the increasing numbers of requests for Vitamin D tests. It is apparent that there is little significant utility in testing for Vitamin D concentrations unless the investigations relate directly to a suspected metabolic bone disease or for patients with a high risk of bone disease.

Based on the Laboratory Committee's recommendation following this review, the Clinical Council has exercised its delegated authority from the HBDHB Board to issue the following directive:

Hawke's Bay District Health Board will in future fund Vitamin D testing only when such testing is:

1. Ordered by an endocrinologist; or
2. Ordered for a patient at high risk of bone disease; or
3. Ordered for the investigation of a patient with suspected metabolic bone disease; or
4. Ordered for other patients only after discussion with and approval by a Chemical Pathologist.
5. *Ordered by a Gastroenterologist*

The relevant clinical information on the request form is essential to allow laboratory staff to determine if the request matches the above criteria and therefore proceed with the testing.

This protocol for Vitamin D testing will be implemented from 1 February 2012.

Peter Foley  
Co Chair HB Clinical Council

John Gommans  
Co Chair HB Clinical Council

## Appendix C



From 3 March 2014, there will be some changes in the testing for community patients. These changes are already in place within the hospital. The changes have been sanctioned by the HBDHB Clinical Council via the Laboratory Committee.

1. Occult Blood testing will no longer be available as a publically funded laboratory test.

Key Points –

- The problem with faecal occult blood testing is that it has only been shown to be of benefit as a screening procedure and certainly has been shown to reduce mortality from bowel cancer by picking this up earlier in this circumstance.
- The test is very non specific (approx 80% positive tests are false positives) and may lead to a potentially dangerous procedure being undertaken which may not in fact have been indicated (in those with false positives).
- The only indication for this test is as part of a screening programme and it should not be used to determine whether there is any active bleeding from the gut nor whether iron deficiency anaemia is due to bleeding from the gut nor under any other circumstances.
- There is a Pilot Study currently underway in Waitemata DHB, investigating the efficacy and feasibility of population screening in an identified asymptomatic but at risk (on the basis of age) population. Until a population screening programme has been rolled out nationally or into our region we will not be providing this test locally.
- This is the view of gastroenterologists and surgical colonoscopists in HBDHB and also in keeping with the nationally agreed criteria for colonoscopy in the public system.
- Those practitioners who still do FOB testing must discuss with their patients what they will do in the event of a positive result. Options would include arranging colonoscopy via a private provider. The FOB testing can still be done by the laboratories but on a fee for service basis.
- FOB is not indicated and should not influence decision-making in symptomatic patients. It is of no benefit in the investigation of iron deficiency anaemia. Patients with 'Red Flag' symptoms or signs (rectal bleeding, abdominal or rectal mass, clinical evidence of bowel obstruction, iron deficiency anaemia in a man or non-menstruating woman, change in bowel habit) should be referred urgently to the appropriate local service.

2. Liver Function Profile tests

- When a request comes through for "LFT" or there is an orderly list of tests that is equivalent to the current liver function test profile the following tests will be performed:
  - Albumin
  - Bilirubin
  - AST
  - ALT
  - ALP
- The GGT and Total Protein tests can still be requested individually but they will not be routinely done automatically within the LFT profile.
- Please ensure you emphasise the need for the GGT and/or the Total Protein test on the request form

Dr Malcolm Arnold Clinical Director Medicine HBDHB  
Dr Geoff Smith Clinical Biochemist SCLHB

# Appendix D – SUPERSEDED SEE Appendix K



## Mini News

### Faecal calprotectin (FCP)

**FCP will become a 'Tier 2' test and as such specimens will only be tested if the request is either made or approved by a specialist.**

FCP has become established as a marker of intestinal inflammation. While it is useful in identifying those with inflammatory bowel disease (IBD) who require endoscopy<sup>1,2</sup>, it should be remembered that elevated levels are not specific for IBD. High values can be seen in any cause of intestinal inflammation, intestinal malignancy, in NSAID use and in neonates and infants<sup>3</sup>. The lack of specificity for IBD means that FCP *SHOULD NOT* be the first line test in the investigation of abdominal symptoms. In particular, infective causes of persistent symptoms should be excluded before requesting FCP.

One of the primary indications for measuring FCP is chronic diarrhoea (for which there is no infective cause) - an important sign of possible IBD. A corollary of this is that patients who have formed stool are unlikely to have significant gastrointestinal inflammation.

FCP assay is not warranted in this group. Additionally, the stool sampling procedure for the FCP test is unreliable with formed stool.

The laboratory uses a 'cut-off' for FCP of 50 ug/g stool. The specificity of the test for IBD is increased at higher concentration and some have suggested a 'grey zone' of 50 – 150 ug/g.

#### In summary:

- FCP should only be requested by a specialist or with specialist approval.
- Infectious causes of diarrhoea cause elevated FCP and should be excluded before requesting FCP.
- Raised FCP usually indicates intestinal inflammation but it is not specific for inflammatory bowel disease and other causes may warrant exclusion.
- Testing calprotectin in formed stool is technically difficult and unlikely to be helpful and **will no longer be carried out**.
- FCP values in young children are higher than in adults with values of up to 550 ug/g being normal in neonates. Concentrations fall to adult levels by 4 years of age.

1. Waugh N et al. Faecal calprotectin testing for differentiating amongst inflammatory and non-inflammatory bowel diseases: systematic review and economic evaluation. *Health Technol Assess* 2013;17(55).

2. Tibble JA, Sigthorsson G, Foster R, Forgacs I, Bjarnason I. Use of surrogate markers of inflammation and Rome criteria to distinguish organic from non-organic intestinal disease. *Gastroenterology* 2002;123(450).

3. Hestvik et al. Faecal calprotectin concentrations in apparently healthy children aged 0-12 years in urban Kampala, Uganda: a community-based survey. *BMC Pediatrics* 2011;11(9).

**These changes will take place from 23/02/2015 Iain Christie GM SCLHB**

## Appendix E

Corporate Services



HAWKE'S BAY  
District Health Board

17 September 2015

The Laboratory Services Committee has taken the following decisions regarding requesting of these tests:

**Copper**  
**Zinc**  
**Selenium**

These tests will be restricted to either specialists or by pre-authorisation by a specialist:

- Gastroenterologist
- GI surgeon
- Neurologist
- Approved workplace monitoring scheme
- Chemical pathologist

### **C-peptide**

This test will be restricted to either a specialist or pre-authorisation by a specialist:

- Endocrinologist
- Chemical pathologist

When requesting these tests any-preauthorisation must be stated on the requisition form.

These changes will take effect from 5 October 2015.

Yours faithfully

Mary Wills  
**HEAD OF STRATEGIC SERVICES**

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### **PLANNING, FINANCE & INFORMATICS**

Hawke's Bay District Health Board

Telephone 06 878 8109 Fax 06 878 1648 Email: [mary.wills@hawkesbaydhhb.govt.nz](mailto:mary.wills@hawkesbaydhhb.govt.nz), [www.hawkesbaydhhb.govt.nz](http://www.hawkesbaydhhb.govt.nz)  
Corporate Office, Cnr Omaha Road & McLeod Street, Private Bag 9014, Hastings, New Zealand

## Appendix F



### Pertussis testing – Hawkes Bay

The hospital and community laboratories have been working together to come up with a system to ensure timely pertussis testing where indicated.

We acknowledge that for clinical and laboratory reasons, pertussis diagnosis can be difficult in the community. Clinically, presentation can be non-specific, especially in the partially immune individual. PCR testing in the first three weeks of illness is the most sensitive test, but it is relatively expensive and so at this time cannot be offered to all community-dwelling individuals with a coughing illness.

While the vaccine has its limitations, it is important for children, healthcare workers, those working with children, and pregnant women are vaccinated and/or receive boosters.

### TESTING PROTOCOLS

#### Samples processed by the hospital laboratory:

1. As indicated as urgent by Public Health
2. Specimens from within Hospital e.g. Paediatric or Emergency Department

Samples from **patients not fitting into the criteria above and below should be discussed with the community (SCL) microbiologist/s, and may be tested at SCL by PCR.** Testing is typically only performed if there is a paediatric or public health indication (please indicate the criteria on the lab form), such as:

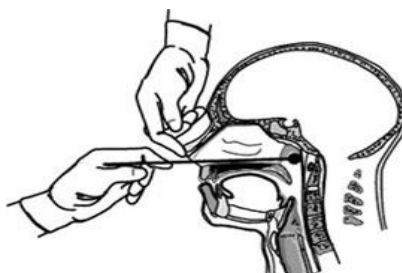
1. Infant < 12 months of age
2. Pregnant women in 3rd trimester
3. Immunocompromised
4. In daily contact with infants < 12 months, pregnant women, or others at risk of severe illness or complications

Pertussis testing by culture and serology are no longer routinely offered by New Zealand laboratories. We do not recommend pertussis culture due to poor sensitivity and prolonged turn-around-time for results. Serology lacks specificity, particularly when acute and convalescent sera are not available.

Please note: asymptomatic close contacts of confirmed cases should not be tested. In addition, patients on, or have been on, antibiotics without resolution of symptoms do not automatically qualify for testing.

### SAMPLE COLLECTION:

The recommended sample is a **nasopharyngeal swab** (do NOT place in liquid UTM).



You will need the items pictured, one blue top tube (labelled with patient details), one FLOQ swab (for illustration - shown front and back) and a request form.

- Once the nasopharyngeal swab has been taken, the swab should be placed into the tube immediately after it is removed from the nasopharynx.
- The swab has a small red line on the shaft which is the break point.
- When placing the swab in the tube the lid can be pressed down at that break point (used as leverage) and the rest of the shaft snapped off. (The use of the lid stops the swab 'flying out' of the tube).

Swabs should be collected during the patient consultation. Please do not send patients to SCL collection rooms as our staff do not collect nasopharyngeal swabs.

## NOTIFICATION

If your patient has a clinically compatible illness and the diagnosis is most likely pertussis, please **notify Public Health** with the information listed below. Please note: Follow-up is only likely to occur if the person is in a high-risk category or has contact with others in a high-risk category.

### Information to supply to public health when notifying:

- **Your details:** Name, treating Dr/NP, contact number
- **Case details:** Name, address, age, ethnicity, NHI, occupation, contact number, pregnant?
- **Clinical History:** Especially onset date of illness, paroxysmal cough onset date
- **Laboratory tests:** Testing done or not
- **Immunisation Status:** Dates of pertussis immunisations if available
- **High risk: Is this a pregnant woman or age <1 year or is the case in contact with these groups Y/N?**
- **Occupations:** Advise if early childhood/day-care attendance/healthcare worker/early childhood teacher (high risk)

**NOTIFY Public Health: Phone (06) 834 1815 Fax: 06 834 1816**

*If you have questions please direct them to:*

Dr Rosemary Ikram, Clinical Microbiologist, HBDHB

Dr Richard Doebling, Clinical Microbiologist, Southern Community Laboratories

Dr Arlo Upton, Clinical Microbiologist, Southern Community Laboratories

Dr Rachel Eyre, Public Health Specialist, HBDHB

## Appendix G



### Change from Amylase to Lipase testing

**Lipase is a more specific test as an indicator of acute pancreatitis than Amylase.**

In Hawkes Bay, Total Amylase has traditionally been used as the diagnostic test for acute pancreatitis, but many other conditions can also result in elevated serum amylase values including cholecystitis, gastroenteritis, peptic/perforated ulcers, tubal/ectopic pregnancy, acute appendicitis, salpingitis, acute pulmonary oedema and diabetic ketoacidosis. Amylase however, is not generally the test of choice to diagnose and monitor these conditions.

For the diagnosis of acute pancreatitis, serum Lipase offers a higher sensitivity than Amylase. Lipase also offers a larger diagnostic window than Amylase, since it stays elevated for longer, thus allowing it to be a useful diagnostic marker in early and late stages of acute pancreatitis.

### **From Monday 25 February 2019, Lipase will replace Total Amylase for routine investigation of possible acute pancreatitis.**

For situations where Amylase is the appropriate or required test, please request Total Amylase and provide supporting clinical details, otherwise Lipase will be performed instead. Co-ordering of both Amylase and Lipase has shown little to no increase in diagnostic sensitivity and specificity.

Lipase can also be assayed, as Amylase has been, on drain fluid and pleural fluid, if that will assist diagnosis.

Total Amylase will still be available for a short time from the HBDHB laboratory, but once current reagent supplies are exhausted, it will become a send-away test to Canterbury Health Laboratories.

Ross Boswell

*Clinical Director, HBDHB Laboratory*

Melissa Yssel

*Clinical Biochemist, Southern Community Laboratories*

# Appendix H

## Testing Update for *H. pylori* June 2019



*Helicobacter pylori* is a bacterium that can live in the acidic conditions in the stomach because it produces an enzyme, urease, which generates ammonium hydroxide from urea to neutralise the acid in its local environment. It may invade the gastric mucosa to produce gastritis and gastric ulceration. Diagnosis of *H. pylori*-associated gastritis is important because it is possible to eliminate the infection with "triple therapy": usually a one or two week course of the antibiotics amoxicillin and clarithromycin together with a proton pump inhibitor such as omeprazole. In those who are allergic to penicillin, metronidazole can be used instead of amoxicillin.

*H. pylori* gastritis is uncommon in NZ-born Europeans. In an Auckland-based study of a group of patients undergoing gastroscopy, NZ European prevalence was reported as 7.7%, which ranks among the lowest rates for *H. pylori* in the world, but a significantly higher prevalence was noted in Māori (34.9%), Pacific (29.6%), Asian (23.8%), and Indian (19.2%) peoples.

Patients presenting with dyspepsia, and who are in a low epidemiological risk group for *H. pylori* and without red flags, can be empirically treated with a PPI. *H. pylori* testing in this group is only indicated if symptoms do not improve.

Testing should not be done in patients who will be referred for gastroscopy since, if indicated, the CLO test will be performed at gastroscopy.

Please note that these tests (urease test on biopsy, stool antigen) for active *H. pylori* infection are significantly less sensitive if the patient is taking a proton pump inhibitor, and we recommend cessation of PPI for at least two weeks before the test is done.

### **In Hawke's Bay the recommended test for *H. pylori* is stool antigen.**

This test has 95% specificity and 95% sensitivity. Its drawbacks are the need to collect a stool specimen, and the need to stop taking PPI two weeks prior to testing.

#### **Other tests:**

**Serology for anti-*H. pylori* IgG antibodies:** An inferior diagnostic test with sensitivity 90%, specificity 80% and PPV 65%. It cannot distinguish current from past infection. *Serology should only be used when patients cannot stop taking Proton Pump Inhibitors to allow for faecal antigen testing.* If gastroscopy is warranted, a Urease test of a gastric biopsy (CLO test) can be taken at gastroscopy. Culture and sensitivity testing is sometimes necessary if it is thought the bacterium is resistant to standard use antibiotics. The <sup>13</sup>C-Urea breath test is unavailable in Hawkes Bay.

*Malcolm Arnold, Gastroenterologist HBDHB*

*Ross Boswell, Chemical Pathologist HBDHB*

*Rosemary Ikram, Consultant Microbiologist HBDHB*

*Arlo Upton, Consultant Microbiologist SCL*

*Richard Doebling, Consultant Microbiologist SCL*

#### **References:**

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# Appendix I



Southern  
Community  
Laboratories  
Hawke's Bay



6/6/19

Dear Hawke's Bay Clinicians

## Homocysteine testing in Hawkes Bay

Hawke's Bay District Health Board has reviewed the ordering of plasma homocysteine tests. It is a relatively expensive test, and it is not considered particularly useful by bpac<sup>NZ</sup> whose advice I have copied below. You will find their complete document at <https://bpac.org.nz/BT/2014/February/biochemistry.aspx>

The Laboratory Advisory Group, a subcommittee of the Clinical Council, agreed in February 2019 that, in light of bpac<sup>NZ</sup>'s advice, Hawke's Bay DHB will no longer fund this test unless the test has been authorised by a Chemical Pathologist:

- Dr Ross Boswell, Chemical Pathologist, HBDHB
- Dr Melissa Yssel, Chemical Pathologist, Southern Community Labs

Please ensure the consultant name and date of authorisation is written on the laboratory test request form.

Patients who present for testing and who wish to pay the cost themselves will be welcome to have it done, provided they are aware of the bpac<sup>NZ</sup> advice, but from 1 July 2019 those who choose not to pay will not have the test processed.

Kind regards – Ross Boswell  
Chair, Hawke's Bay Laboratory Advisory Group  
Chemical Pathologist, HBDHB

*Homocysteine is a sulphur-containing amino acid interconverted with methionine in a very important cycle of intermediary metabolism (methylation cycle), in which folate and vitamin B12 are required co-factors. Deficiency of folate and vitamin B12 may be associated with raised homocysteine, but measurement of these vitamins directly is generally considered adequate to assess the patient's nutritional status.*

*Population evidence shows raised plasma homocysteine levels to be associated with long-term cardiovascular risk, however, intervention trials using B vitamin supplementation (folate, B12, B6) to lower homocysteine have been disappointing, suggesting such supplementation may be associated with worse outcomes.<sup>27</sup> It is therefore most likely that mild/borderline homocysteine elevation is not itself causative of vascular disease, but rather may be a marker of other more complex predisposing nutritional factors. Regardless, since modifying homocysteine has been proven to be of little benefit its measurement as a cardiovascular risk marker was not considered sufficient to justify public funding.*

*Measuring plasma homocysteine is indicated when a monogenic disorder of methionine and homocysteine metabolism is suspected, e.g. patients with early or atypical thrombosis (including presentations such as retinal vein thrombosis), and when homocystinuria is otherwise suspected on clinical grounds.*

*Homocysteine elevation has also been suggested to be a marker of long-term risk of neurodegenerative diseases, such as Alzheimer's disease. A recent systematic review suggested there may be a weak association between raised homocysteine and dementia risk, but the evidence was of very low quality.<sup>28</sup> As with vascular disease, there was no proof of causal relationship, and no proof that lowering homocysteine mitigates this risk. Raised homocysteine is also associated with other factors which are themselves known to increase long-term dementia risk, such as diabetes, renal impairment, and advancing age.*

*Reference: bpac<sup>NZ</sup>. The New Zealand Laboratory Schedule and Test Guidelines: Biochemistry tests. Best Tests. 2014; February. Available at: <https://bpac.org.nz/BT/2014/February/biochemistry.aspx>*

# Appendix J



11/8/20

Dear Hawke's Bay Clinicians

## **New Test Restrictions September 2020**

Southern Community Laboratories is preparing to introduce electronic ordering for some Hawkes Bay requestors in coming months. As part of this process, the HBDHB Lab Advisory Group has agreed that the following tests will become restricted tests from September 2020:

Test	Previous status	New Test Restriction
ACTH	No restriction	Specialist approval required
Growth Hormone	Guideline	Specialist approval required
HSV Type Specific Antibodies	No restriction	Clinical microbiologist approval required
Insulin-Like Growth Factor	Not specified	Specialist approval required
Jak2 Val617phe	Not specified	Specialist or approved or Health Pathway
Thiopurine Methyl Gene Analysis	Not specified	Specialist approval required
Urine Magnesium (Timed)	No restriction	Specialist approval required

Please ensure that requests for these tests include appropriate clinical details. If a GP is ordering the test after consultation with, or on behalf of, an appropriate Medical Specialist please include details and request a copy of the results to the Specialist if appropriate.

Please feel free to contact the laboratory if you have questions or wish to discuss any of these tests with a Pathologist.

Dr Melissa Yssel  
*Chemical Pathologist, Southern Community Laboratories*

Dr Ross Boswell  
*Medical Director, HBDHB Laboratory*

## Appendix K



### Community Referrer Requesting of Calprotectin

Because calprotectin is a relatively expensive test (the cost to HBDHB is about \$110 + GST per test), a requirement was instituted that requests be limited to those made by, or advised by, gastroenterologists. With the current understaffing of the HBDHB Gastroenterology Department, that is impractical.

That requirement is therefore suspended, and community requestors can order faecal calprotectin for the following situations:

- To exclude Irritable Bowel Syndrome in patients who have prolonged or repeated episodes of diarrhoea. A single negative test is a good negative predictor of IBD in a symptomatic patient. A test above the reference range is not diagnostic of IBD, but may indicate a role for further testing. Advice from specialist services should be sought in this scenario.
- In patients who have an established diagnosis of IBD, for monitoring disease activity and predicting symptomatic relapse over the subsequent 6 months. Such patients should be under the care of specialist services.

**Please supply clinical particulars to indicate the reason for testing – requests without clinical details or that do not meet the above criteria will not be tested.**

Please note that:

- Where there is a high likelihood of Inflammatory Bowel Disease (IBD), calprotectin is rarely a useful test. Colonoscopy or cross-sectional small bowel imaging are favoured (accessed via referral to specialist services). The triaging specialist may, on occasion, ask that a calprotectin is sent from primary care.
- It not useful (although it may be abnormally increased) in infectious diarrhoea, coeliac disease, diverticulitis, or GI malignancy.

Dr Ross Boswell  
*Clinical Director*  
*HBDHB Laboratory*

Dr Melissa Yssel  
*Chemical Pathologist*  
*Southern Community Laboratories*

21 December 2020