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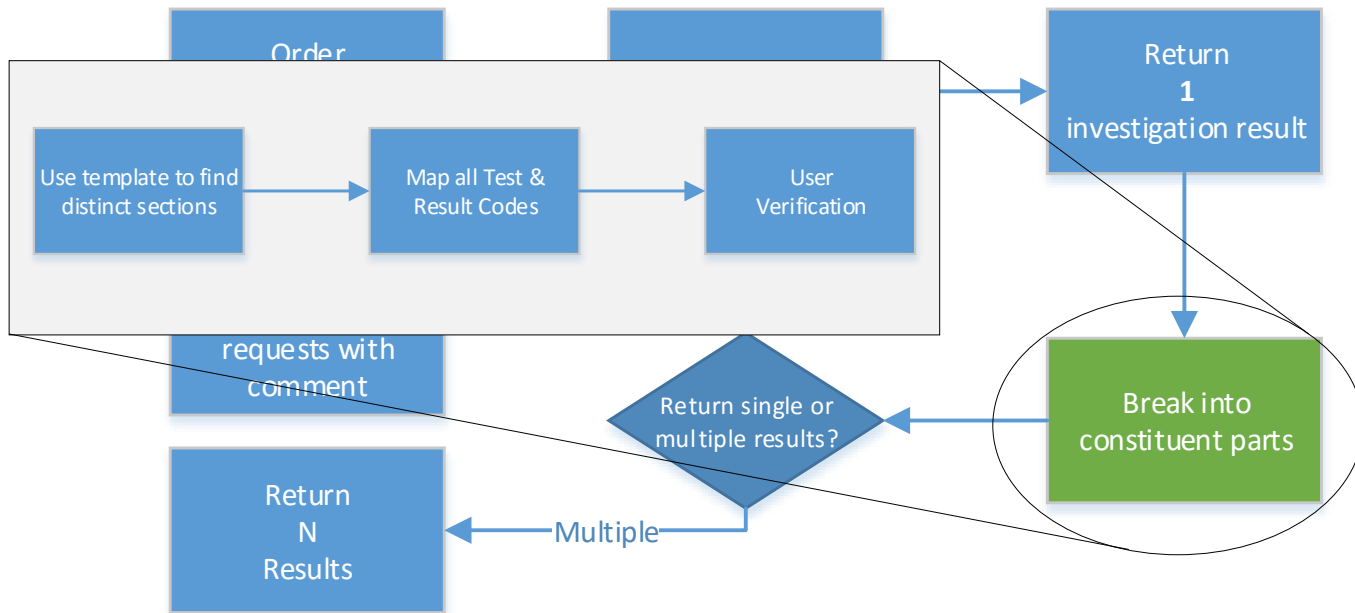


Complex Reporting

- What happened last year?
- A more theoretical approach – what does hl7 suggest?
- System Capabilities
- Samples from NPEX
- Discussion



Last year's proposal - workflow





Last year's proposal - verification

Authorize results

Received Result

Enterovirus RNA not detected by PCR
Parechovirus RNA not detected by PCR
VZV DNA NOT detected by PCR
EBV DNA NOT detected by PCR
HSV DNA type 1 or 2 NOT detected by PCR
Parvovirus B19 DNA NOT detected by PCR

Sample Information

Your Lab Number	F,15.0005441.P
Originating Lab Number	SHH Microbiology: F,15.0005441.P

Original Result	Result Type	Code	Result	Comment
Enterovirus RNA not detected by PCR	Organism ▼	Enterovirus RNA	Not Detected ▼	
Parechovirus RNA not detected by PCR	Organism ▼	Parechovirus RNA	Not Detected ▼	
VZV DNA NOT detected by PCR	Organism ▼	VZV DNA	Not Detected ▼	
EBV DNA NOT detected by PCR	Organism ▼	EBV DNA	Not Detected ▼	
HSV DNA type 1 or 2 NOT detected by PCR	Organism ▼	HSV DNA type 1 or 2	Not Detected ▼	
Enterovirus RNA not detected by PCR	Organism ▼	Enterovirus RNA	Not Detected ▼	
Parvovirus B19 DNA NOT detected by PCR	Organism ▼	Parvovirus B19	Not Detected ▼	



Theoretical Approach

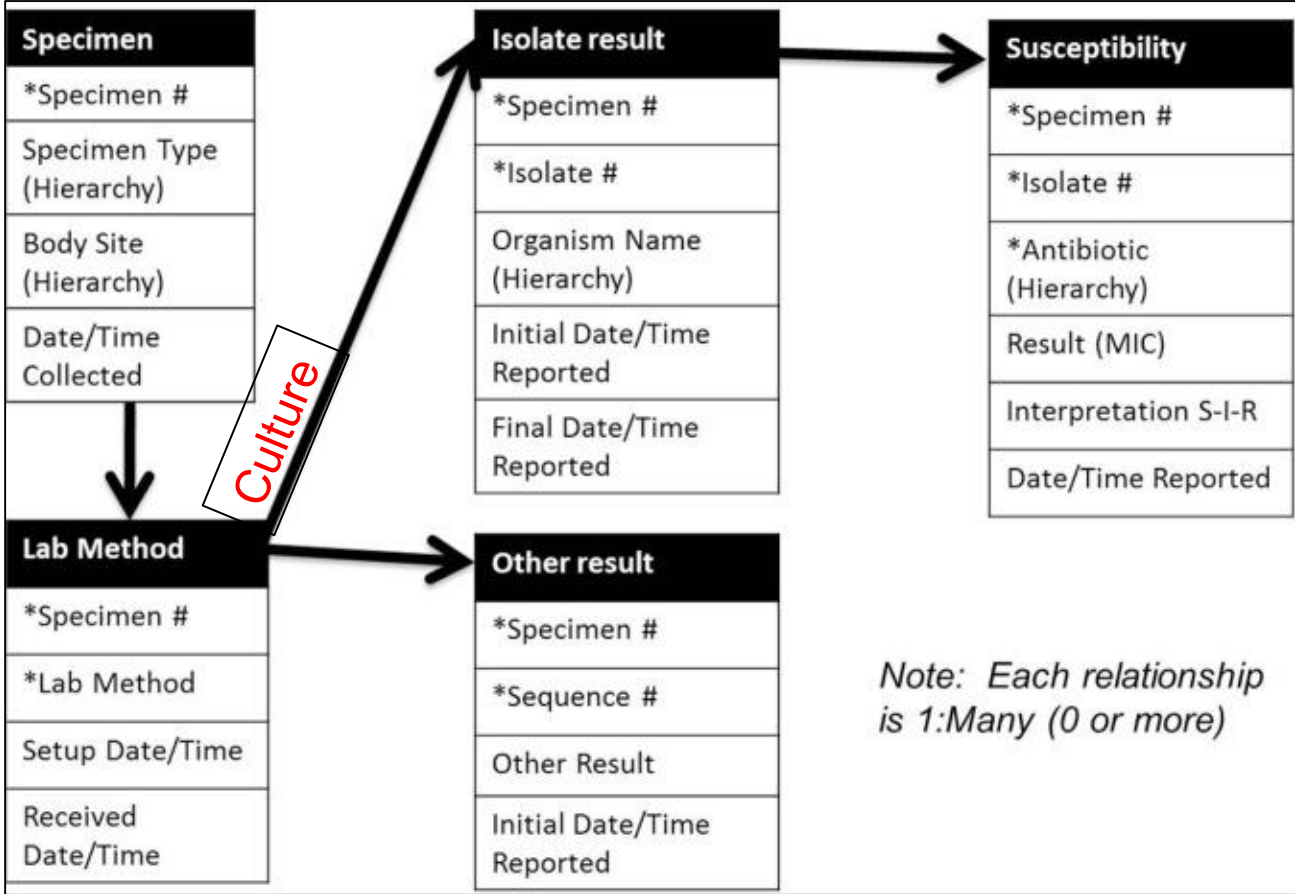
- Paper written in 2003 (!?) by CDC
- Scenario based
 - 1. Receipt or log in of a specimen with no results
 - 2. Individual test (other than a culture) that identifies an organism
 - 2a. A culture
 - 3. One culture with two susceptibility groupings for one organism
 - 4. One culture with one antibiotic susceptibility grouping for one organism
 - 5. Deleting of an organism from a culture



Domain model (simplified)

CDC model:

- Single Order
- Multiple Specimens
- Multiple Cultures
- Multiple Isolates
- Multiple Sensitivities



<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3540481/>



1. Specimen Received, no results

- Representing the receipt or log in of a specimen with no results (Scenario 1), page 17
- ORDER for Routine Sputum Culture, specimen received
- MSH|^~\&|LabOneApp|LabOne^45D0470381^CLIA|NEDSS^1644^WADOH||20011001093245||ORU^R01^ORU_R01|113445|P|2.3.1
- PID|||999-3^^^GoodDr^MR||Able^Michael^D^^^L
- ORC|RE|0889436^GoodDr|ABC012345^LabOne|||||20011001093245|L0234^Roberts^Steve^^^L^LabOne^L^L^EI|^Good^Robert^^^MD^^L
- **OBR**|1|0889436^GoodDr|ABC012345^LabOne|6460-0^Spt
RoutineCult^LN|||20011001091234|||||200110010823|SPT&Sputum&HL70070|^Good^Robert^^^MD^^L|||||
20011001093245||MB|



2. Individual test (other than a culture) that identifies an organism

- Representing an individual test (other than a culture) that identifies an organism (Scenario 2) page 19
- Prelim results - S pneumo Ag Spt test (LOINC® 31968-1) result was positive (SNOMED G-A200)
- MSH|^~\&|LabOneApp|LabOne^45D0470381^CLIA|NEDSS^1644^WADOH||20011002111520||ORU^R01^ORU_R01|113481|P|2.3.1
- PID|||999-3^^^GoodDr^MR||Able^Michael^D^^^L
- ORC|RE|0889436^GoodDr|ABC012345^LabOne|||||20011001111050|L0234^Roberts^Steve^^^L^LabOne^L^^^E||^Good^Robert^^^MD^^L
- **OBR**|1|0889436^GoodDr|ABC012345^LabOne|6460-0^Spt RoutineCult^LN|||20011001091234|||||200110010823|SPT&Sputum&HL70070|^Good^Robert^^^MD^^L|||||20011001111050||MB|P
- **OBX**|1|CE|31968-1^S pneumo Ag Spt QI^LN|1|GA200^positive^SNM



2a. A culture, page 20, more prelim results

- Staphylococcus aureus identified with a colony count of 10,000 to 90,000.
 - Beta hemolytic Streptococcus A identified with a colony count of <1,000
 - Haemophilus influenzae identified with a colony count of 10,000 – 90,000
-
- MSH|YadaYadaYada<cr>PID|||RhubarbRhubarb<cr>ORC|BlahBlah
 - OBR|1|0889436^GoodDr|ABC012345^LabOne|6460-0^Spt
RoutineCult^LN|||20011002111003|||||200110010823|SPT&Sputum&HL70070|^Good^Robert^^^MD^L|||||20011002072359||MB|P
 - OBX|1|CE|11475-1^MICROORGANISM IDENTIFIED:^LN|1|L-24801^Staphylococcus aureus^SNM
OBX|2|CE|564-5^Colony count^LN|1|10,000-90,000
OBX|3|CE|11475-1^MICROORGANISM IDENTIFIED:^LN|2|L-25128^Beta hemolytic Streptococcus A^SNM
OBX|4|CE|564-5^Colony count^LN|2|<1,000
OBX|5|CE|11475-1^MICROORGANISM IDENTIFIED:^LN|3|L-13401 ^Haemophilus influenzae^SNM
OBX|6|CE|564-5^Colony count^LN|3|10,000-90,000

OBX:4-SUB-ID



One culture with one antibiotic susceptibility grouping for one organism, page 26

- Staphylococcus aureus identified
 - This isolate is Resistant to Ampicillin with an MIC of 32 µg/mL
 - This isolate is Sensitive to Amoxicillin/Clavulanic Acid with an MIC of 2 µg/mL
 - This isolate is Sensitive to Cefazolin with an MIC of 8 µg/mL
- >Note: OBR-26 - Parent Result and OBR-29 – Parent in the second OBR segments provide “linkage” back to particular isolates in the original order/result. This is discussed in more detail in the Segment Details section for the OBX segment.

```

MSH|YadaYadaYada<cr>PID|||RhubarbRhubarb<cr>ORC|BlahBlah
OBR|1|0889436^GoodDr|ABC012345^LabOne|6460-0^Spt
RoutineCult^LN|||20011001091234|||||200110010823|SPT&Sputum&HL70070|^Good^Robert^^^MD^L|||||2001
1002072359||MB|P
- OBX|1|CE|11475-1^MICROORGANISM IDENTIFIED:^LN|1|L-24801^Staphylococcus aureus^SNM
OBR|2||ABC012346^LabOne|29576-6^Bacterial Susc Panels|t^LN|||||
11475-MICROORGANISMIDENTIFIED:&LN^1^Staphylococcus aureus||0889436&GoodDr^ABC012345&LabOne
- OBX|1|CE|28-1^Ampicillin MIC^LN|1|32|µg/mL||R
- OBX|2|CE|32-3^AmoxCla MIC^LN |1|2|µg/mL||S
- OBX|3|CE|76-0^Cefazolin MIC^LN |1|8|µg/mL||S

```

Reflex



3. One culture with two susceptibility groupings for one organism, (Scenario 3), page 23

• Staphylococcus aureus identified with a colony count of 10,000 to 90,000. This isolate is Resistant to Ampicillin with an MIC of 32 µg/mL, Sensitive to Amoxicillin/Clavulanic Acid with an MIC of 2µg/mL, Sensitive to Cefazolin with an MIC of 8 µg/mL

• Beta hemolytic Streptococcus A identified with a colony count of <1,000

• Haemophilus influenzae identified with a colony count of 10,000 – 90,000. This isolate is Sensitive to Ampicillin by Kirby-Bauer, Amoxicillin/Clavulanic Acid by Kirby-Bauer, Cefazolin by Kirby-Bauer

>Note: OBR-26 - Parent Result and OBR-29 – Parent in the second and third OBR segments provide “linkage” back to particular isolates in the original order/result. This is discussed in more detail in the Segment Details section for the OBX segment.

MSH|YadaYadaYada<cr>PID|||RhubarbRhubarb<cr>ORC|BlahBlah

OBR|1|0889436^GoodDr|ABC012345^LabOne|6460-0^Spt RoutineCult^LN
|||20011001091234|||||200110010823|SPT&Sputum&HL70070|^Good^Robert^MD^LN|||||20011002072359||MB|P

– OBX|1|CE|11475-1^MICROORGANISM IDENTIFIED:^LN|1|L-24801^Staphylococcus aureus^SNM

– OBX|2|CE|564-5^Colony count^LN |1|10,000-90,000

– OBX|3|CE|11475-1^MICROORGANISM IDENTIFIED:^LN|2|L-25128^Beta hemolytic Streptococcus A^SNM

– OBX|4|CE|564-5^Colony count^LN |2|<1,000

– OBX|5|CE|11475-1^MICROORGANISM IDENTIFIED:^LN|3|L-13401 ^Haemophilus influenzae^SNM

– OBX|6|CE|564-5^Colony count^LN|3|10,000-90,000

OBR|2||ABC012346^LabOne|29576-6^Bacterial Susc Panellst^LN||||||||||||||||

11475-1&MICROORGANISMIDENTIFIED:&LN^1^Staphylococcus aureus|||0889436&GoodDr^ABC012345&LabOne

– OBX|1|CE|28-1^Ampicillin MIC^LN|1|32|µg/mL||R

– OBX|2|CE|32-3^AmoxCla MIC^LN |1|2|µg/mL||S

– OBX|3|CE|76-0^Cefazolin MIC^LN |1|8|µg/mL||S

OBR|3||ABC012347^LabOne|29576-6^Bacterial Susc Panellst^LN||||||||||||||||

11475-1&MICROORGANISMIDENTIFIED:&LN^3^Haemophilus influenzae|||0889436&GoodDr^ABC012345&LabOne

– OBX|1|CE|29-9^Ampicillin KB^LN|3|||S

– OBX|2|CE|21-6^AmoxCla KB^LN|3|||S

– OBX|3|CE|77-8^Cefazolin KB^LN|3|||S



5. Deleting of an organism from a culture, page 28

- MSH|YadaYadaYada<cr>PID|||RhubarbRhubarb<cr>ORC|BlahBlah
- OBR|1|0889436^GoodDr|ABC012345^LabOne|6460-0^Spt RoutineCult^LN|||20011001091234|||||200110010823|SPT&Sputum&HL70 070|^Good^Robert^^^MD^^L|||||20011002072359||MB|P
- OBX|1|CE|11475-1^MICROORGANISM IDENTIFIED:^LN|1|L-24801^Staphylococcus aureus^SNM||||(D)



System capabilities

	HL7 v2.x element	Description	CDC	RES in	RES out	RES in	RES out	RES in	RES out	RES in	RES out	RES out	RES in	RES out	RES in	RES out	RES in	RES out	RES in	RES out	RES in	RES out
	26	PID Patient Identification			30																	
+	29	PV1 patient visit info																				
	32	{ begin order																				
+	33	ORC Order Control																				
	58	NTE order comment																				
	59	NTE... addl. order comment																				
+	60	OBR Request			40																	
	113	NTE Request Comment			42																	
	114	NTE... addl. Request Comment			42	?	?															
	115	{ Observation begin																				
+	116	OBX Observation			50 (ASL)		Restricted															
+	135	NTE Observation Comment			52								?									
+	140	NTE... addl. Observation Comment			54	?	?	?														
+	148	{ addl. Observation begin																				
	153	} order end																				
	154	{ begin addl. order																				
	155	OBR... Request			40								?									
	156	} end addl. order																				
	157																					ZMO



System capabilities – OBX-4: Sub-ID

	HL7 v2.x element	Description	CDC	RES in	RES out	RES in	RES out	RES in	RES out	RES in	RES out	RES out	RES in	RES out	RES in	RES out	RES in	RES out	RES in	RES out	RES in	RES out
+	60	OBR Request			40																	
	113	NTE Request Comment			42																	
	114	NTE... addl. Request Comment			42	?	?															
	115	{ Observation begin																				
-	116	OBX Observation			50 (ASL)		Restricted															
	117	1 set ID	h																			
	118	2 value Type																				
	119	3 Observation Identifier																				
	120	4 Observation sub-ID																				
	121	5 observation value																				
	122	6 units																				
	123	7 reference range																				
	124	8 Abnormal flags																				
	125	9 Probability																				
	126	10 nature of abnormal test																				
	127	11 Obs result status																				
	128	12 Date Last Obs Normal Values																				
	129	13 User Defined Access Checks																				
	130	14 date/time of Obs																				
	131	15 Producer's ID																				
	132	16 Responsible Observer																				



System capabilities OBR-26,-29:Parent

HL7 v2.x element	Description	CDC	RES in	RES out	RES in	RES out	RES in	RES out	RES in	RES out	RES out	RES in	RES out	RES in	RES out	RES in	RES out	RES in	RES out	RES in	RES out	RES in	RES out
2																							
60	OBR Request			40																			
61	1 Set ID																						
62	2 Placer Order Number																						
67	3 Filler Order Number																						
72	4 Universal Service ID																						
79	5 order status																						
80	6 Requested Date/Time																						
81	7 Observation Date/Time																						
82	8 Observation End Date/Time																						
95	21 Filler field 2																						
96	22 Results Rpt/Status Chng - Date/Time																						
97	23 Charge to Practice																						
98	24 Diagnostic Service section ID																						
99	25 Result Status																						
100	26 Parent Result																						
101	<Parent Observation Identifier (CE)>																						
102	<Parent Observation Sub-identifier (ST)>																						
103	<Parent Observation Value Descriptor (TX)>																						
104	27 Quantity/Timing																						
105	28 results copied to List																						
106	29 Parent																						
107	<Placer Assigned Identifier (EI)>																						
108	<Filler Assigned Identifier (EI)>																						



Findings/Conclusions/Discussion

- OBX-4
 - appears to be available in most systems and recent work between Stockport and MRI suggest it is also replicable in PMEP compliant systems
 - It may be possible to replicate scenario 2a where a result has child results – this will probably cover many situations.
 - Would need to be tested on a case-by-case basis as implementation logic and coverage appears to be highly variable. Our example varies OBX-1 and keeps OBX-4 the same. Some systems appear to do the opposite
- OBR-26,-29
 - do not appear in *any* LIMS specifications, (apart from EPIC)
 - More complex results where reflex type tests *as and with* referenced children do not appear to be feasible using structured (coded) data
- NPEX is not confident that LIMS specs we have reflect the actuality of LIMS interfaces



Last year's proposal - verification

Authorize results

Received Result

Enterovirus RNA not detected by PCR
Parechovirus RNA not detected by PCR
VZV DNA NOT detected by PCR
EBV DNA NOT detected by PCR
HSV DNA type 1 or 2 NOT detected by PCR
Parvovirus B19 DNA NOT detected by PCR

Sample

Your Lab	F,15.0005441.P
Originating Number	SHH Microbiology: F,15.0005441.P

Original Result	Result Type	Comment	Result	Comment
Enterovirus RNA not detected by PCR	Organism	Enterovirus RNA	Not Detected	
Parechovirus RNA not detected by PCR	Organism	Parechovirus RNA	Not Detected	
VZV DNA NOT detected by PCR	Organism	VZV DNA	Not Detected	
EBV DNA NOT detected by PCR	Organism	EBV DNA	Not Detected	
HSV DNA type 1 or 2 NOT detected by PCR	Organism	HSV DNA type 1 or 2	Not Detected	
Enterovirus RNA not detected by PCR	Organism	Enterovirus RNA	Not Detected	
Parvovirus B19 DNA NOT detected by PCR	Organism	Parvovirus B19	Not Detected	



Examples of current usage for complex reporting

- Imperial(SunQuest) reporting to Worcester (Winpath CSV-FTP)
 - SunQuest LIMS doesn't accept "Overall Comments" (in our terminology). Only "Result Comments" can be accepted. Any Result comments entered by SunQuest are added to the last OBX in message by default.

H100209 Collect D/T: 17/03/2016 0930

Order physician: XD WORCESTERSHIRE ROYAL HSP

Renin and Aldosterone Group

Plasma Aldosterone	490	(100-800)
Plasma Renin Activity	0.5	(0.5-3.1)
Aldosterone PRA ratio	H 1220	(<800)

(NOTE)
CLIN DET PROVIDED:
HTN low pl.R /on Amlod. (?also on Irbesartan

INTERPRETATION:
Borderline raised aldosterone / renin ratio (>850) but in the presence of low normal PRA. Thus: results do not appear to be highly suggestive of Conns syndrome.

PRA is usually very low in patients with Conns, typically 0.3 nmol/L/h or lower.

However: clinical details on Cerner suggest that the patient may have been in receipt of a CCB and . more importantly . an A2RB when the sample was taken. Both of these antihypertensives (A2RB, especially) may cause significant increase in usual baseline PRA, thus leading to lowered A/R ratios.

Suggest repeat plasma A/R ratio after discontinuing any interfering drugs for 2 weeks.

B blockers and NSAIDs MUST be removed: often suppress PRA alone from usual baseline, leading to false positive A/R ratios. It may also be helpful to remove ACEi/A2RB, CCB and diuretics, as noted above. The only antihypertensives that have minimal effect on aldosterone and renin are the a blockers, e.g. doxazosin.

Marked hypokalaemia (<3.0 mmol/L) may impair aldosterone production. If relevant: please ensure adequate potassium replacement before any replacement blood sample is taken. Please phone if you wish to discuss (Tel 020 331 15181).(Michael Scanlon)

Aldo/Renin comment <<DO NOT REPORT>>

WinPath : Worcester 8H - Philip Hadley

File Edit View Patient Utilities Codes Tools Help

Results Entry - 16W999933

Name: ICBMALE, TEST
Cons/GP: TEST CLINICIAN

Status: Incomplete

Edt All View All

Tests

- TEST Profile 2 (Imperial)
- Aldosterone (TEST)
- Renin (TEST)
- Aldosterone/Renin ratio (TE

RENAL : Aldosterone:renin ratio

Result	Status	Value	Range	Units	Flags
Aldosterone measurement	Final	490	100-800	pmol/L	
Renin measurement	Final	0.5	0.5-3.1	nmol/L/h	
	Final	1220			High

(NOTE)
CLIN DET PROVIDED:
HTN low pl.R /on Amlod. (?also on Irbesartan

INTERPRETATION:
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B blockers and NSAIDs MUST be removed: often suppress PRA alone from usual baseline, leading to false positive A/R ratios. It may also be helpful to remove ACEi/A2RB, CCB and diuretics, as noted above. The only antihypertensives that have minimal effect on aldosterone and renin are the a blockers, e.g. doxazosin.

Marked hypokalaemia (<3.0 mmol/L) may impair aldosterone production. If relevant: please ensure adequate potassium replacement before any replacement blood sample is taken. Please phone if you wish to discuss (Tel 020 331 15181).(Michael Scanlon)

NTE|13||both of these antihypertensives (A2RB, especially) may
NTE|14||significant increase in usual baseline PRA



Free text to coded results

Request

From ARES (Telepath)

FULL|I,16.0025285.J^64104,31376||I,16.0025285.J|W830143|4270138823||P92035|IFAB|S|01072016|0000|||||/? vit b12 deficient||||HOPETRAF|

To LabCentre

MSH|^~\&|XLAB|XLAB|RW600|OVERRIDDENBYADAPTER|20160705090714||ORM^O01|b10a0406-c365-4753-b045-f48eb435208e|P|2.3.1||AL|NE
PID|1||
PV1|1|UN|SALFORDL2L||||SALFORDL2L NTE|1||? vit b12 deficient
ORC|NW|I,16.0025285.J||||^201607010000^R||20160705090714.2244+0000||SALFORDL2L|SALFORDL2L
OBR|1|I,16.0025285.J||IFA||201607010000|||||HS&Blood&L^

Result

From LabCentre

MSH|^~\&|RW600|LabCentre|XLAB|XLAB|20160706145129||ORU^R01|0659072522_43676*17719*216|P|2.3.1||AL|NE
PID|1||
PV1|1|N|SALFORDL2L||||SALFORDL2L|OTH
ORC|RE|I,16.0025285.J|H02349144W^RW600||||^201607010000||20160706145128||SALFORDL2L^SALFORD^Npex^^Dr|SALFORDL2L^SALFORD NPEX
OBR|1|I,16.0025285.J|H02349144W^RW600|IFA^Intrinsic Factor Antibody^L||201607010000|||||? vit b12 deficient|201607051207|HS&HAEMATOLOGY
SERUM&L^^&&L|||||20160706145129||HM|F
OBX|1|ST|IFA^Intrinsic Factor Antibody^L||NEGATIVE|||||F

To ARES (Telepath)

00|PMEP||||a3251e61-5af6-40d3-ae80-34adf1a392dd|20160706135341.9265+0000|
10|\$\$\$||
12|||||
14|||||
16|||
20|HOPETRAF|HOPETRAF|
22|||
24|I,16.0025285.J|20160706145129|
30|4270138823|W830143|WN7 2TH|6 THORNEYCROFT|LEIGH|LANCASHIRE||WEBB|ANN||2|19431018||
32|? vit b12 deficient|
40|1|I,16.0025285.J|201607010000|S||
50|ASL|1||||IFA|Intrinsic Factor Ab.|N|||||
70|^|^
90|ENDPMEP|

NPEX mapping
Text 'Negative' -> coded 'N'

A simple example,
but generic structure
gives lots of potential



Cellpath / Histology

MSH|^~&|UKW|UKW|NPEX|NPEX|20160609081900||ORU^R01|23NPEXOUT100000000570|P|2.3.1
 PID||9999998909|9999998909^^^1|01011970|GOLDEN^PHOENIX||19700101|F||W11 ORF
 PV1||O|LABA|||||||||O
 ORC|RE|C,16.0012356.Q|HN16-1^CoPathPlus||CM||||201606090815|^c-Ladipo^Liakim||XLABGP^NPEX PHYSICIAN^TESTING
 OBR||C,16.0012356.Q|HN16-1^CoPathPlus|HCNG;1^NG Cytology HH||201606081400|||||201606090815|^Pleural Fluid|XLABGP^NPEX
 PHYSICIAN^TESTING||||F|201606090819||HCNG;1^NG Cytology HH|F|^R^R^ROUT|||||^c-Ladipo^Liakim
 OBX|1|TX|HCNG;1^NG Cytology HH|1|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|2|Cytology (Non-Gyn) Report|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|3|Patient Name: XXXXXXXXX|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|4|Med. Rec. No: XXXXX|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|5|DOB: 01/01/19XX|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|6|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|7|Specimen Type:|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|8|A: Pleural Fluid|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|9|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|10|Clinical Details:|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|11|WHITE OUR R LUNG, PLEURAL THICKENING, NO GROWTH FROM PLEURAL FLUID AND NO|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|12|MALIGNANT CELLS BUT ?MALIGNANCY VS ?PLEURAL INFECTIONLL NECROTIC LUNG,
 POSSIBLE|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|13|MASS IN ANTERIOR SEGMENT OF RUL|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|14|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|15|Microscopic Description:|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|16|Sample contains small lymphocytes, macrophages and polymorphs along with very|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|17|occasional mesothelial cells. No malignant cells|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|18|seen.|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|19|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|20|Final Diagnosis:|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|21|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|22|A. Pleural Fluid: No malignant cells seen|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|23|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|24|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|25|***Electronically Signed Out By Liakim Ladipo***|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|26|||||F
 OBX|1|TX|HCNG;1^NG Cytology HH|27|Date Signed Out:09/06/2016 08:19|||||F



A proposed example

<REPORT>

<TESTS>

<! This section could have test results as codes or text, also units etc could be added>

<TEST>

<TESTCODE>AFBMIC</TESTCODE>

<TESTNAME>AFB Microscopy</TESTNAME>

<TESTRESULT>+++</TESTRESULT>

</TEST>

...

</TESTS>

<ORGANISMS>

<! I am guessing that we would need to use codes for the organisms and antibiotics that would be mapped in NPEX>MTUB

</ORGANISMS>

<ANTIBIOTICS>

ISO S

RD S

ETH S

PYR S

</ANTIBIOTICS>

<COMMENTS>

PCR for the presence of DNA from the M.tuberculosis complex :POSITIVE

No mutations associated with Rifampicin resistance detected.

</COMMENTS>

</REPORT>



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