NHS
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and Bassetlaw Pathology

GP BEST Event

Wednesday 15th October 2025
BHF Priory Centre,
Barnsley

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South Yorkshire and Bassetlaw Pathology Network
Barnsley Hospital

NHS Barnsley Hospital NHS Foundation Trust
NHS Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust
NHS Sheffield Children's NHS Foundation Trust
NHS Sheffield Teaching Hospitals NHS Foundation Trust
NHS The Rotherham NHS Foundation Trust

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A bit about me…

- Consultant Clinical Scientist (Biochemistry) based at Barnsley
- Trained in Salford, Liverpool, Wigan, worked for 12 years at Mid-Yorks
- Moved to Barnsley in August 2019 (just before the pandemic!)
- In April 2024, Barnsley Pathology subsumed by South Yorkshire and Bassetlaw Pathology Partnership (SYBP), part of STH
- Though Pathology is part of SYBP, we still serve the local community of Barnsley (primary and secondary care)

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SYB Pathology Partnership

- South Yorkshire and Bassetlaw Covers S Yorks ICS:
  - 170 GP practices
  - 5 acute trusts
  - 9 hospitals (7 acute)
  - 3698 beds
  - 4 local authorities
  - 3 community/mental health trusts
  - 1 ambulance trust
  - Over 6000 VCSE organisations

SYB Areas

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Barnsley: 329.2 km^2
Pop 245,199
Known for: Michael Parkinson

Doncaster: 568 km^2
Pop 310,000
Known for: Jeremy Clarkson

Sheffield: 367.9 km^2
Pop 584,853
Known for : Michael Palin

Bassetlaw: 637.8 km^2
Pop 116,839
Known for : Donald Pleasance

Rotherham: 286.5 km^2
Pop 264,671
Known for : Chuckle Brothers

- Total area: 1005.7 km^2
- Total Population: 1.522M

Disparate demographics across patch

Comparing Barnsley and Sheffield

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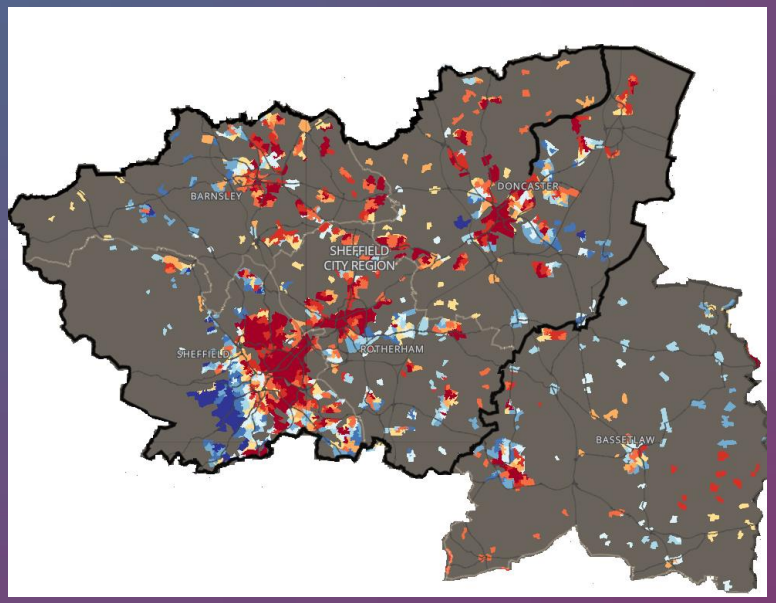
Team Parky v Team Palin

Barnsley

- Former mining town
- Not ethnically diverse (95.5% white British)
- Small town
- Outlying semi-rural former pit villages
- One of highest rates of people on incapacity benefit
- Median age 42
- 40-44% people live with chronic disease



Sheffield

- Former industrial powerhouse (steel)
- Ethnically diverse (19% BAME)
- Big city
- High student population
- Inner city deprivation
- Suburban affluence
- Median age 37
- 19% have long-term health problem
- Destroyed in Threads

Problems with guidance across network

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- Disparate populations
- Different priorities
- Also, individual labs across network use different equipment
- Results vary between manufacturer
- Though electrolytes *shouldn't* be radically different

SYBP Partnership

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- Currently in process of procurement for new equipment
- Lots of work underway to implement new LIMS
- Very different regions of network
- Have different demographics and clinical priorities
- Providing a one size fits all Pathology service is difficult
- There remains the need to have standardised pathways/protocols

Guidance provided by STH

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- Shared to BEST website (and equivalents in other areas)
- Based upon information, evidence and guidance from RCPath, NICE, BMJ Best Practice etc
- Standardise practice across the ICS
- Documents for some of the most common abnormal lab findings
- Electrolytes, thyroids, LFTs
- Problem with ensuring documents are up to date and most current guidance is accessible

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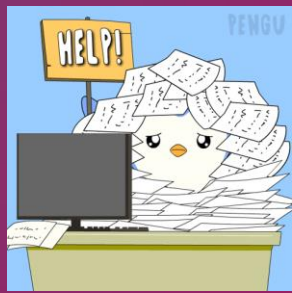
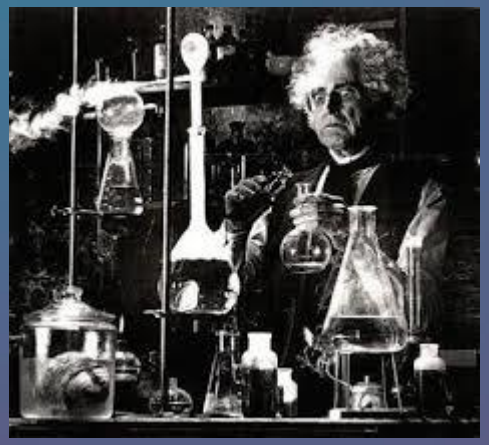
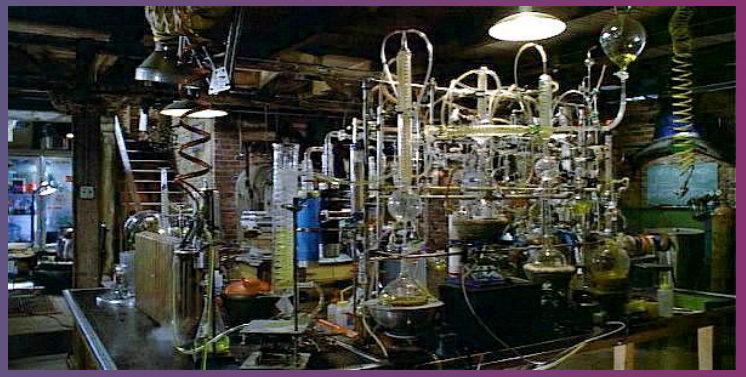
Documentation

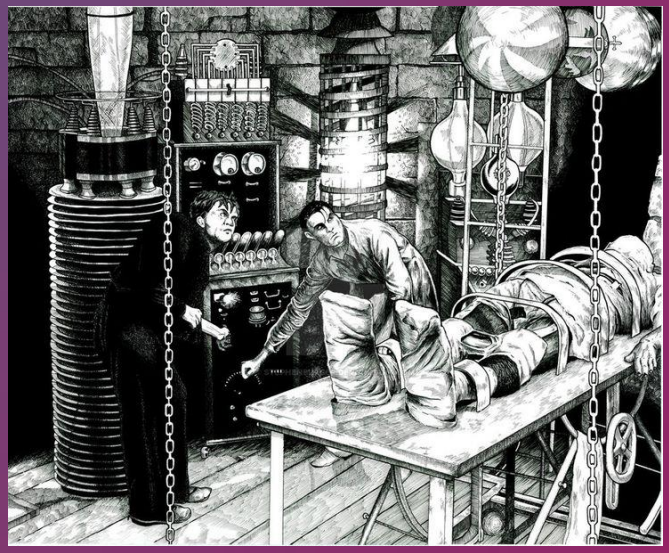
- UKAS accreditation standards insist that all lab documentation maintained and reviewed
- A lot of resources go towards document control
- Task now bigger as it's across the Network
- Don't have standardised documents across Network yet
- Recently implemented a new document control package
- Cloud-based
- Accessible from anywhere via web (in theory!)



What does a lab look like?







What the lab actually looks like

Basic lab operation

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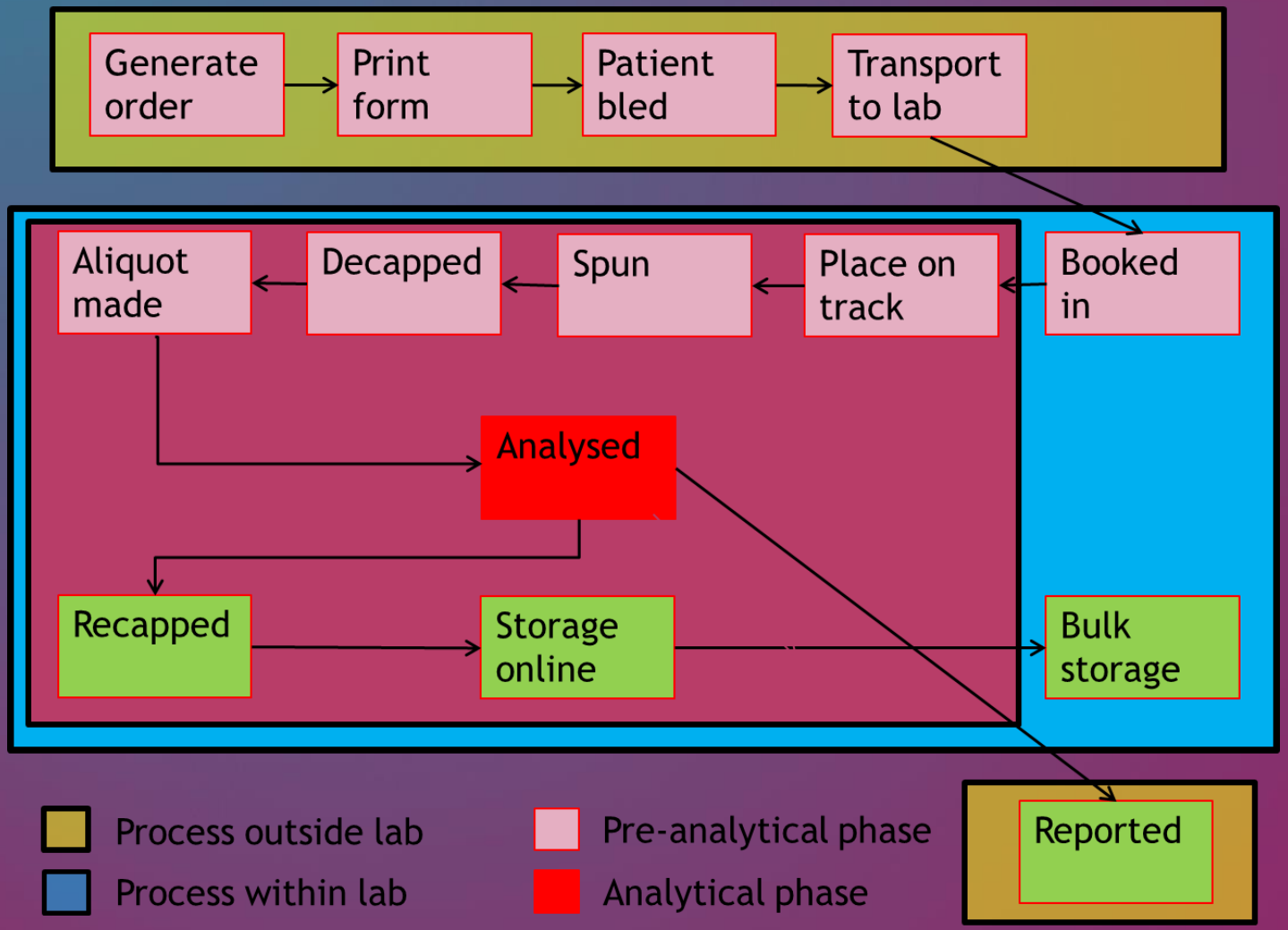

Result authorisation

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- Technical authorisation
  - Do the results make sense technically?
  - Quality control
  - instrument alerts
- Clinical authorisation
  - Do the results make sense clinically?
  - Check previous, clinical details
  - Add additional tests (if indicated)
  - Contact requesting clinician (if indicated)

Lab responsibility

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- We can't look at every single blood test result
- Vast majority of results are normal and released
- Abnormal results flagged, reviewed (retrospectively, results generally released immediately)
- Mild abnormalities not commented upon
- Or else have automated comments appended
- Critically abnormal results are phoned to requestor (or surrogate eg I-Heart) directly from lab
- Some less abnormal results may be phoned later by clinical team

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Lab critical phoning limits

- Informed by document from RCPath
- See The Communication of Critical and Unexpected Pathology Results 2017 (under review)
- Urgent results phoned from analyser immediately
- Refer to results that would usually require admission
- May depend on other factors too (eg renal patients)

Critical phoning limits in Biochemistry

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- Doesn't include eGFR, AKI, ammonia
- Results for more specialist tests may be phoned also (eg metabolics)
- Also delta checks
- May also vary according to local practice

Analyte (serum/plasma)	Units	Action Limits[a]		Communication Type[b]		Comments
		Lower	Upper	Primary Care	Secondary Care	
Na	mmol/L	120 (130 if < 16 yrs)	160	A	A	Note particular concern of risk of death in children with hyponatraemia.
K	mmol/L	2.5	6.5	A	A	Exclude haemolysis/old samples/EDTA contamination first. Agree, by local consensus, higher thresholds for phoning results in patients with known kidney disease including those on dialysis.
urea	mmol/L		30 (≥ 10 if < 16 yrs)	A	A	Agree, by local consensus, higher thresholds for phoning results in patients with known kidney disease including those on dialysis. Specific local cut points likely to be required for babies and neonates.
creat	umol/L		354[c] (≥ 200 if < 16 yrs)	A	A	
glucose	mmol/L	2.5[d]	25 (≥ 15 if < 16 yrs)	A	A	Exact cut points and response should be determined locally. [d]Glucose results < 2.5 mmol/L from primary care may be less crucial to phone immediately. For GPs and OPD, upper cut point of 30 mmol/L in known type 2 DM may be more appropriate.
Calcium (adj)	mmol/L	1.8	3.5	B[e]	A	[e]Primary Care: If out of hours (OOHs) then communication next day to GP or GP OOHs service. Calcium levels ≥ 3.5 mmol/L may warrant more immediate communication with Primary Care as agreed by local consensus.
Mg	mmol/L	0.4		A	A	
PO4	mmol/L	0.3		B	A	
AST	U/L		15 x ULN	A	A	Agree specific cut points with key users locally (A&E, Liver Unit/Medical Admissions, GI Medicine).
ALT	U/L		15 x ULN	A	A	
Total CK	U/L		≥ 5000	A	A	
Amylase/Lipase	U/L		5 x ULN	A	A	
Digoxin	ug/L		2.5	B	A	Check timing >6hrs from last dose. More urgent if K+ < 3.0 mmol/L. Phone immediately to primary care if overdose suspected or K+ low.
Theophylline	mg/L		25	B	A	
Phenytoin	mg/L		25	B	A	
Lithium	mmol/L		1.5	B	A	
CRP	mg/L		300	A	-	
Troponin (I or T)			Local cut off for MI	A	-	Exact cut point should be discussed with local clinicians in cardiology and Primary Care.
AKI			AKI-3	A	A	All new occurrences
AKI			AKI-2	A	A	All new occurrences
AKI			AKI-1	B	A	Only if K > 6.0 mmol/L. Primary Care: If out of hours (OOHs) then communication next day to GP or GP OOHs service.
Ammonia	umol/L		100	-	A	
Bicarbonate	mmol/L	10		-	A	
Cortisol	nmol/L	50		B	A	Unless part of overnight dexamethasone suppression test
Cortisol (SST 30min)	nmol/L	250		B	A	As part of short synacthen test. Cut point used may need to be specific to assay being used.
Ethanol	mg/L		4000	-	A	or 400 mg/dL - consider much lower threshold in paediatrics.
Paracetamol	mg/L		f	A	A	f - All detectable levels - Agree specific thresholds locally with acute admissions/A&E - especially for paediatric samples.
Salicylate	mg/L		300	A	A	
Bilirubin (conj)			25	B	A	Neonates only
Urate	umol/L		340	B	A	Ante-natal indications only

Current Laboratory-Directed Guidance

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- Various guidelines on STH Lab Med page
- LabMed Homepage
- Haematology and Biochemistry
- Source information
- *Should* be accessible via NHS device (though apparently isn't!)
- Run through some of the more salient information

Hyponatraemia

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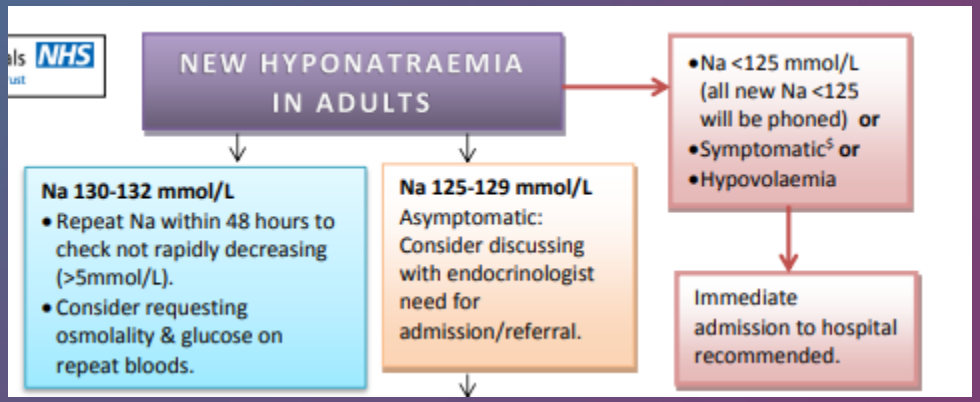

Hyperkalaemia

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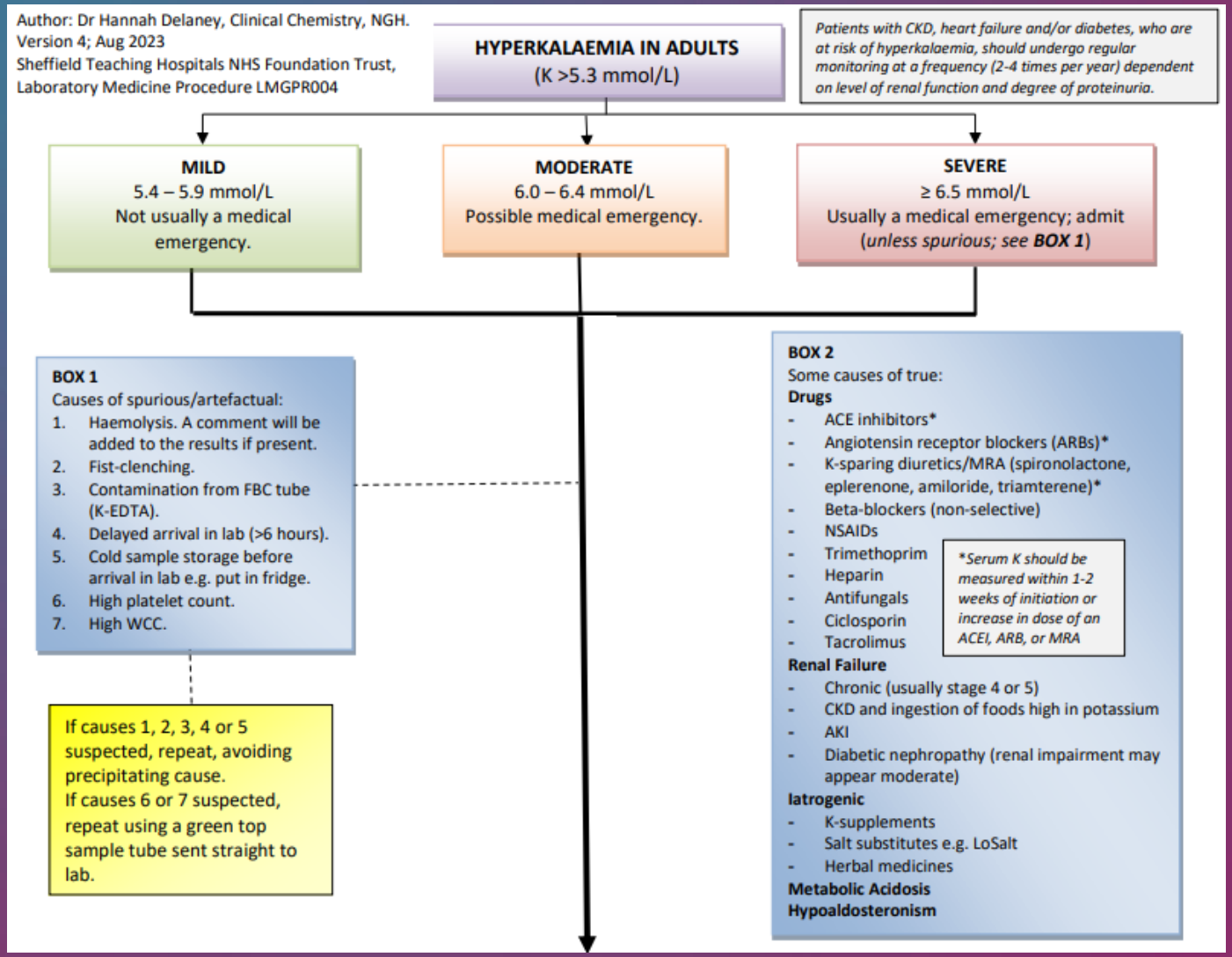

Hypokalaemia

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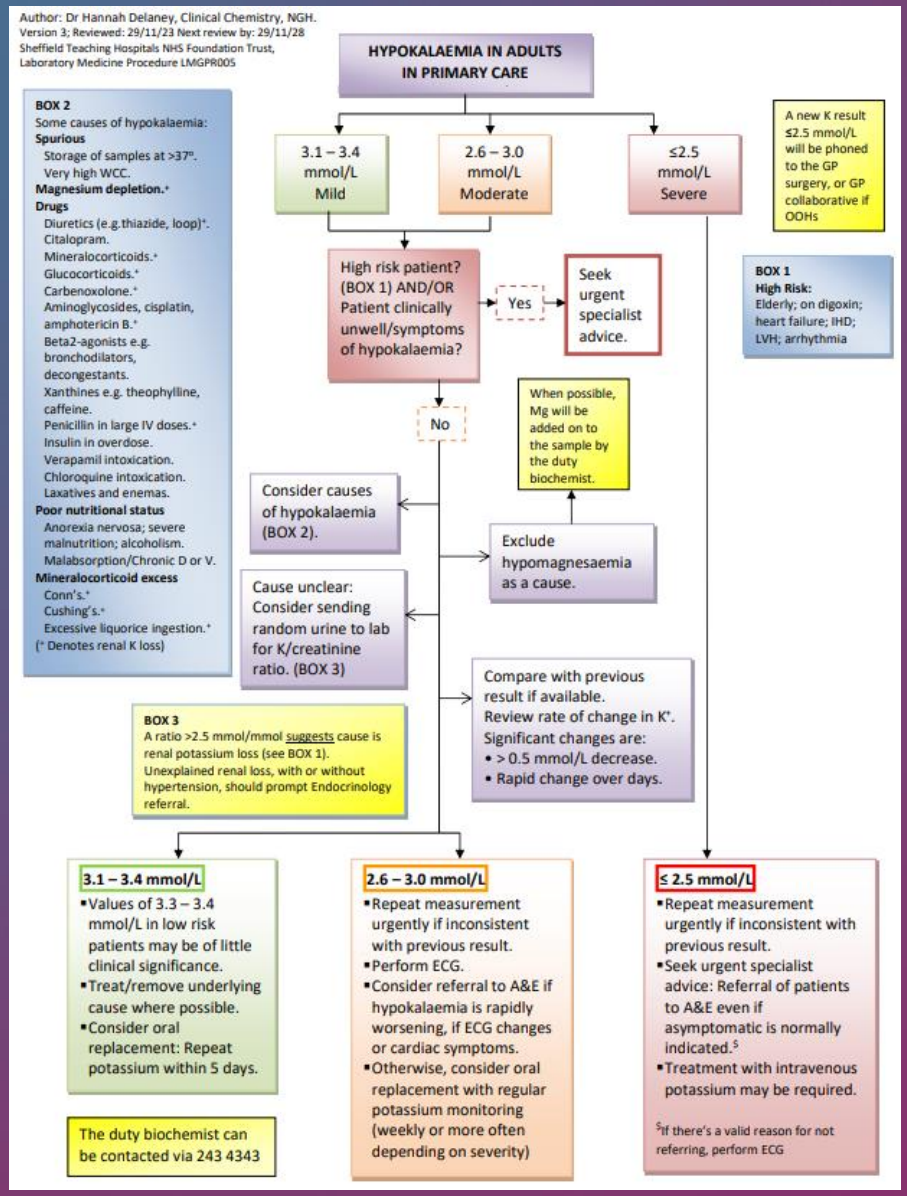

Hypercalcaemia

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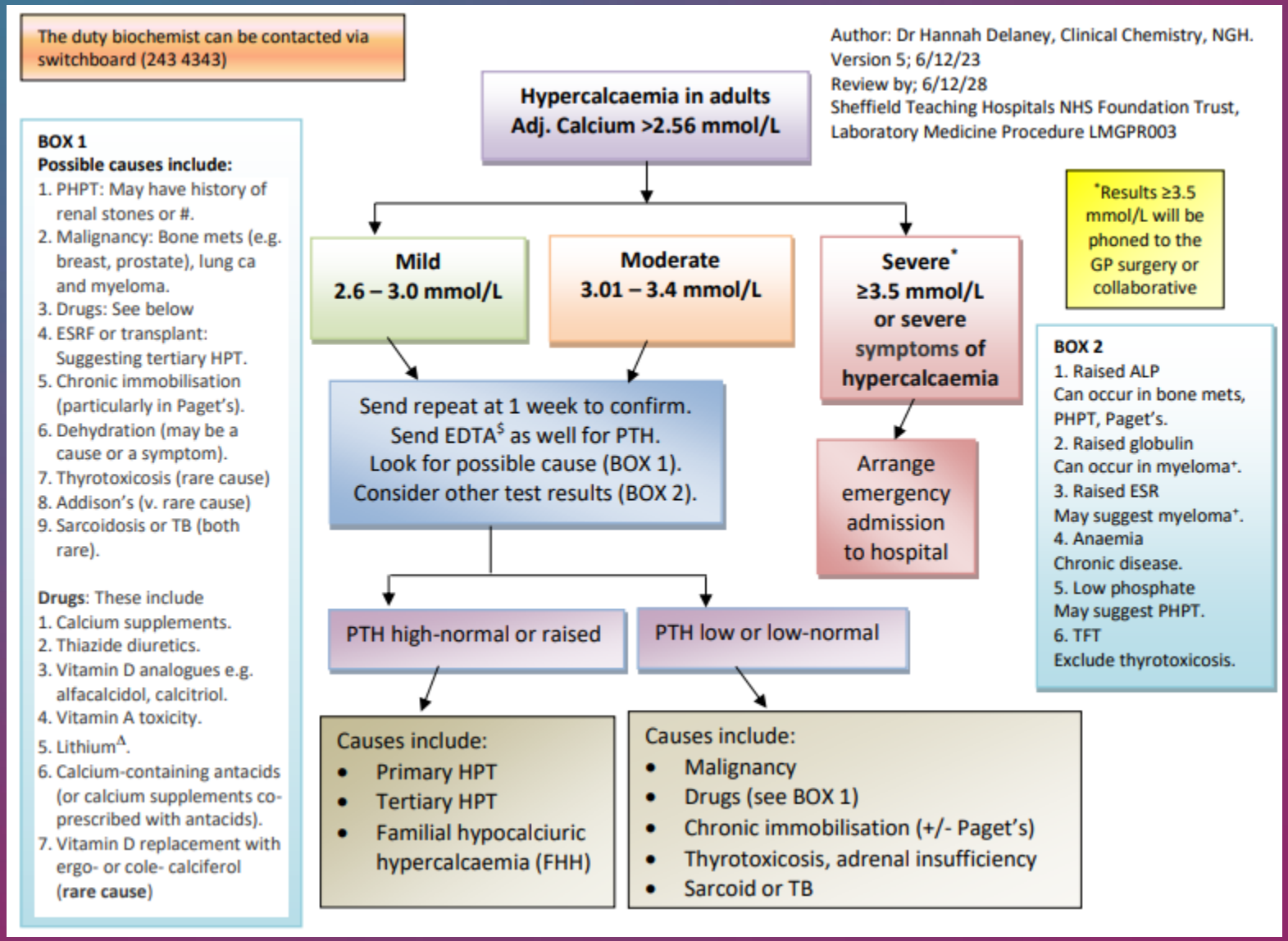

Hypocalcaemia

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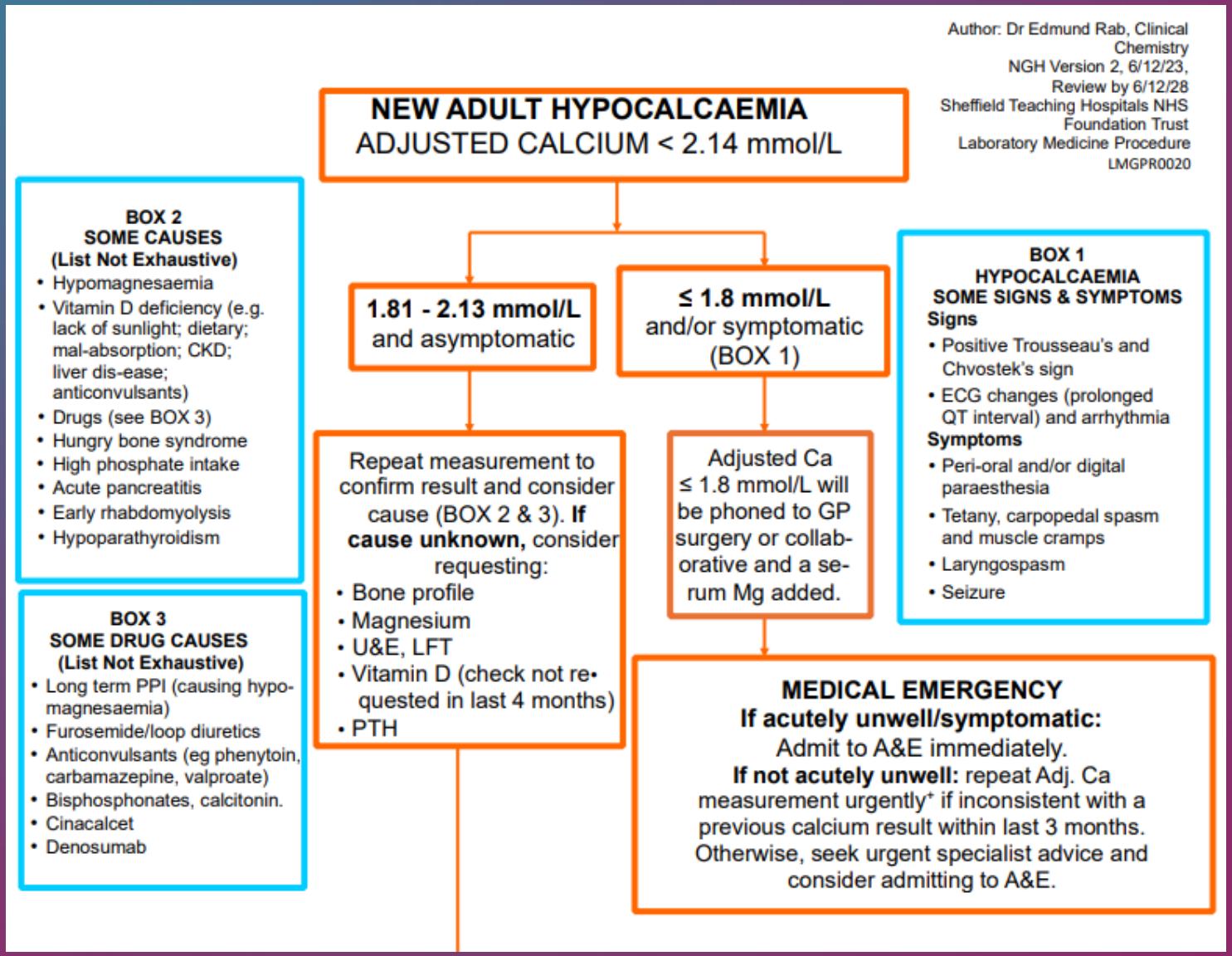

Hypomagnesaemia

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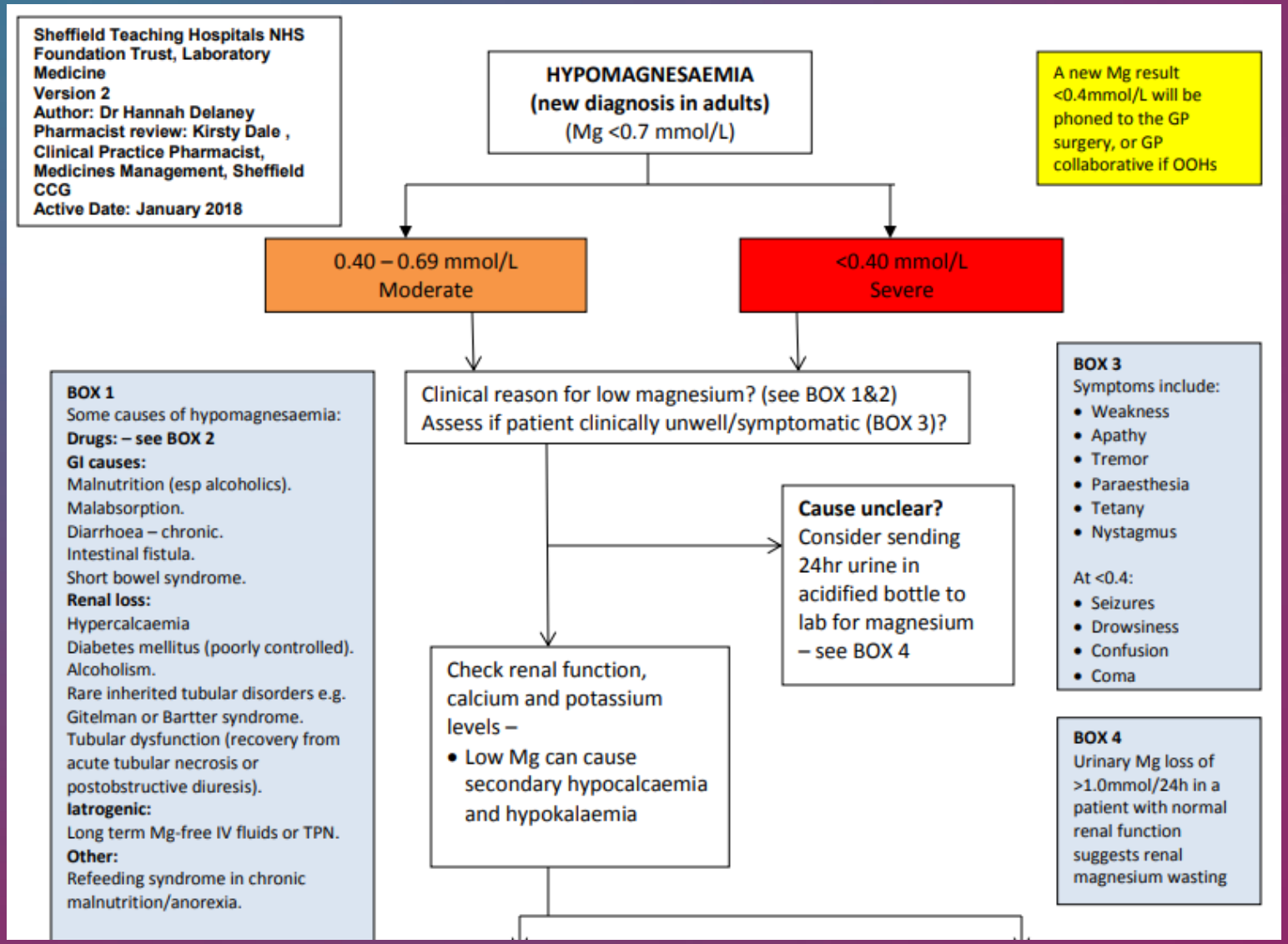

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Take home message

- Most guidance is no different now to how it was years ago
- Any changes should be reflected in the available documents
- Documents should be in cycle of periodic review
- There may be technical variation from different equipment
- This should be standardised in short- to mid-term
- Guidance should be accessible on new document system
- Available on any browser

Any questions?