

CHANGING LIVES

# Updates in Barnsley Biochemistry

**Catherine Dibden / Iain Woodrow**

**Consultant Clinical Scientists**

18 September 2019



# New Consultant Clinical Scientist Team



**Catherine Dibden** joined us in May 2019 from Sheffield Children's NHS Foundation Trust

Special interests: Paediatric Biochemistry, Endocrinology and Tandem Mass Spectrometry.

- Telephone 01226 432772
- E-mail: [catherine.dibden@nhs.net](mailto:catherine.dibden@nhs.net)



**Iain Woodrow** joined us in August 2019 from Pinderfields, Mid-Yorkshire NHS Foundation Trust

Special interests: toxicology, critical care and public engagement  
Involvement in promoting the Lab Tests Online-UK website

- Telephone 01226 435749
- E-mail: [iain.woodrow@nhs.net](mailto:iain.woodrow@nhs.net)

Please do get in touch with us – we will be happy to help with any clinical queries related to biochemistry.

# What's new in Biochemistry?

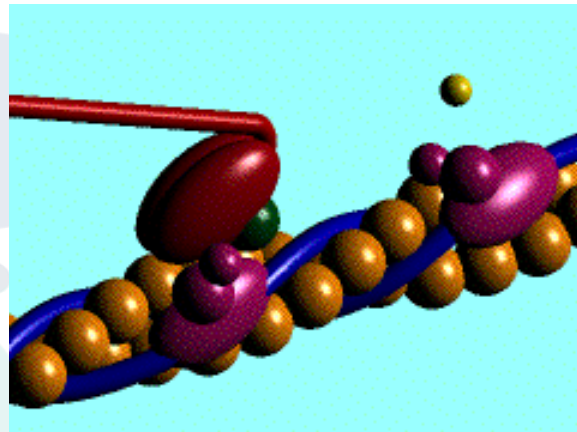
- High-sensitivity Troponin
- eGFR calculation
- Laboratory equipment upgrade
- Electronic improvements (NPEX)
- South Yorkshire and Bassetlaw Pathology Transformation Programme (NHSI)
- Results of full UKAS assessment

# High-sensitivity Troponin I



# Troponins

- Trio of proteins integral to muscle activity: TnI, TnT and TnC
- TnI and TnT have cardiac specific forms (cTnI, cTnT).
- Tests have been available in lab for many years



# Historically

- Positive Tn meant cardiac damage and likely MI/ACS
- Assay performance was limiting factor
- Now have improved high sensitivity assays (hs-TnI and hs-TnT)
- Troponin now detectable in non-MI patients
- BRILS now use hs-cTnI on Siemens

# Integrated into NICE guidance

- CG-95, revised in 2016
- Current local practice: cut off  $>120$  ng/L definite ACS rule in
- Below 3ng/L or initial  $<6$ ng/L and  $+1h \Delta < 3$ ng/L ACS rule out
- Grey area 6 to 120 (without  $1h \Delta < 12$ ng/L)

# Upshot

- Higher sensitivity means a detectable cTnl is no longer diagnostic for MI/ACS
- Timing is critical. +1h result is essential
- Suggest not to request troponin in primary care
- If suspected, send patient to A&E ASAP
- NICE CG-95
  - 1.2.5.1 ***Do not use high-sensitivity troponin tests for people in whom ACS is not suspected. [new 2016]***



# New calculation for estimated Glomerular Filtration Rate (eGFR)

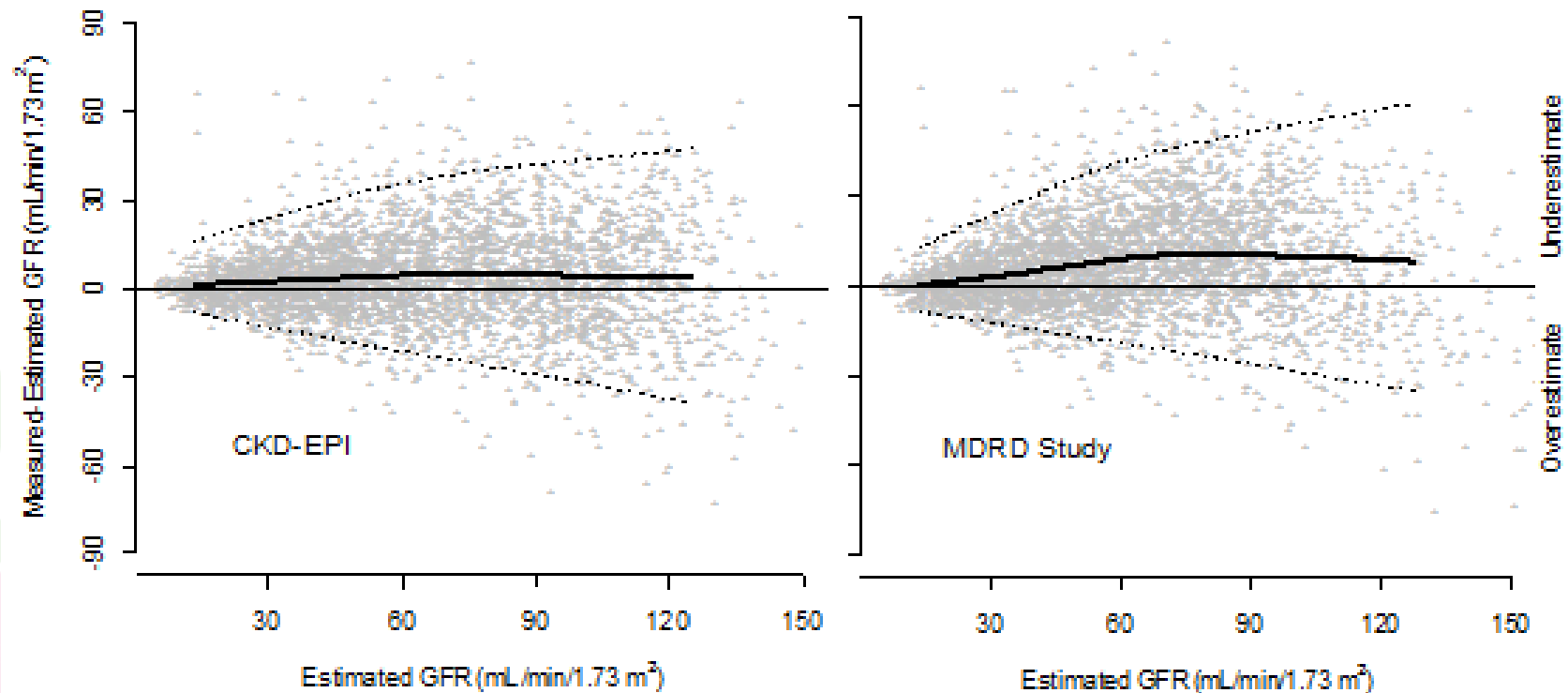
- Live at BRILS from 9 September 2019
- Move from MDRD equation to CKD-EPI



# Why change?

- MDRD
  - Large study (1628 patients) in US in known CKD patients
  - Derived a relationship between [Cr] and kidney function (GFR), integrating age, sex and (limited) racial differences
- CKD-EPI
  - Same variables as MDRD
  - Used two populations: known CKD and low risk non-CKD
  - Has better performance at higher GFR in “healthy” individuals

# Comparison of CKD-EPI and MDRD



# NICE Guidance

- Guideline CG-182 from June 2015
- States that labs should use CKD-EPI equation to derive eGFR
- Same variables as MDRD
- Same caveats apply (muscle mass, amputees, meat consumption)
- Still expressed as per  $1.73\text{m}^2$

# CKD-EPI calculation for eGFR

## Points to remember:

- Adjustment for race: Multiply by 1.159 for African-Caribbean/African family origin.
- Assumes 'average' muscle bulk for patients of same age and gender
  - **NO formula is accurate in patients with**
    - Cachexia
    - Limb amputations
    - Unusual levels of physical fitness
- Be aware when assessing eGFR trends over time:
  - Not directly comparable with MDRD formula
- Serum creatinine results continue to be comparable
- AKI scoring not affected by this change

# Laboratory Equipment Upgrade: Siemens Atellica Solution

- Planned for early 2020
- Upgrade to newer version of existing track, immunoassay and clinical chemistry analysers
  - Same methodology
  - Same reference ranges
  - Improved performance and reliability



# Upcoming electronic improvements: The National Pathology Exchange (NPEx)

- Digital Hub for electronic transfer of patient results between NHS organisations
- Significant potential benefits:
  - Faster turnaround times for referred tests
  - Removes risk of transcription errors between different laboratory IT systems

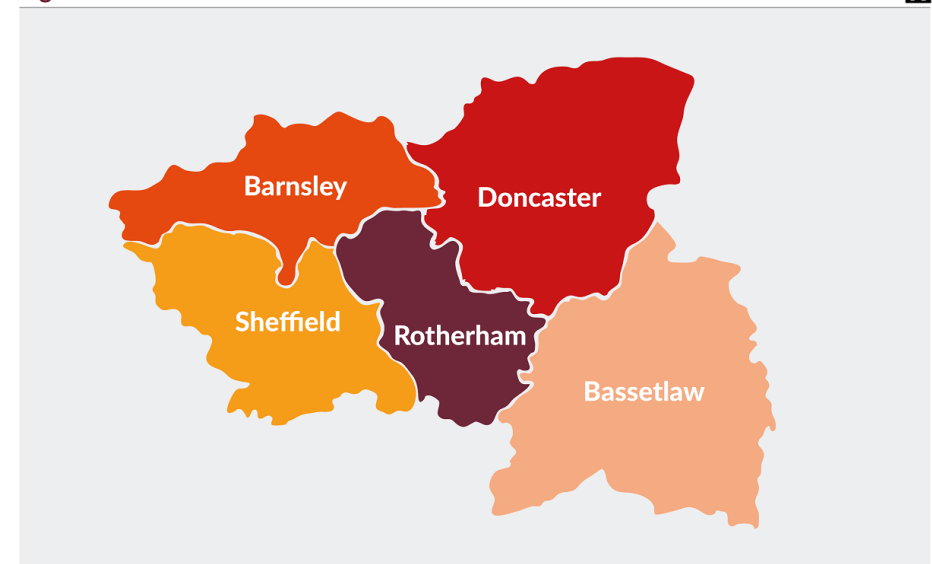
For more information, see <https://www.npex.nhs.uk/benefits>



# South Yorkshire and Bassetlaw Pathology Transformation Programme

- BRILS operates within South Yorkshire and Bassetlaw Pathology Services Partnership
  - Pathology Network: part of NHSI to implement Pathology Transformation Programme
  - Workgroups for service references, workforce, logistics, IT, finance and procurement

Figure 2 The five ICPs in South Yorkshire and Bassetlaw ICS





# UKAS assessment

- Recent UKAS assessment visit (4-5 September 2019)
- Assessment against ISO 15189:2012
- Very positive outcome
  - 9 findings
- Still awaiting final report, anticipating a pass, conditional on resolving findings



# General lab information

Information about the lab and the services we provide can be found on our departmental website <https://www.barnsleyhospital.nhs.uk/pathology/>

Specific information about tests and sample types can be found on our test table site <https://www.barnsleyhospital.nhs.uk/pathology/blood-sciences/blood-sciences-test-repertoire/table/>



# Help us to help you

- Labs are running 24/7
- There is a consultant on call at all times
- Please contact us if you need any advice, interpretation or any other input
- **Please include relevant clinical information**

# Contacts

- Contact either of us by phone or email
- [catherine.dibden@nhs.net](mailto:catherine.dibden@nhs.net)
- 01226 432772
- [iain.woodrow@nhs.net](mailto:iain.woodrow@nhs.net)
- 01226 435749
- Out of hours, contact switchboard for the on-call consultant

# Information for patients

## LAB TESTS ONLINE<sup>UK</sup>

*Your Trusted Guide*

Peer Reviewed • Non-Commercial • Patient Centred



# Thank you

## Questions / Feedback / Discussion Points?

