AUDIT STANDARDS FOR ASSESSMENT OF RENAL FUNCTION

The Renal NSF is due to be published and there will now be demands placed on laboratories for early, sensitive detection of kidney disease. There will also be a need for reliable assessment of renal function to support dialysis, transplantation and other areas of the NSF.

The following standards have been produced from the Draft Renal NSF.

1. Serum creatinine reference ranges should be age and sex-related. Laboratories should ensure their reference ranges are appropriate, the source is known and they have paediatric reference ranges.

2. In the assessment of GFR a serum/ plasma creatinine result alone is not satisfactory.

3. Ideally, the laboratory should supply an estimated GFR in addition to a serum creatinine result. This need not be done on every occasion creatinine is measured but should be done regularly.

4. Serum and urine creatinine assays should be calibrated using an International standard preparation. Laboratories should be aware what is used for the primary standardisation of their method.

5. Laboratories should be aware of the substances which interfere in their creatinine methods e.g. haemolysis, icterus, ketones, lipaemia

6. The collection of 24 hour urines for creatinine clearance should be restricted and not used for the detection and monitoring of chronic kidney disease. They are no longer the 'Gold Standard.'

7. Formulae based on serum/ plasma creatinine levels should be used. They take into account sex, weight, race and body size of the patient. The following formulae are recommended:
    - Adults: Either Cockcroft and Gault or Modified MDRD. The MDRD has not been validated in Asians and gives results 10-20 % higher in non-Caucasians.

      Cockcroft and Gault Male
      1.23 x (140-Age) x Weight (kg)/ S Creat _mol/L

      Cockcroft and Gault Female
      1.23 x (140-Age) x Weight (kg) x 0.85/ S Creat _mol/L

      Modified MDRD
      $186 \times (\text{S creat}/88.4)^{-1.154} \times \text{Age}^{-0.203} \times (0.742 \text{ if female}) \times 1.21 \text{ if black}$

    - Children (above 1 year old) Couchan-Barrett formula
      40 x length (cm) / SCreat _umol/L

8. Results should be effectively communicated to GPs with an interpretation to reduce the risk of late referrals to nephrologists. Abnormal results should be highlighted.

9. Laboratories should take part in a NEQAS scheme for GFR measurements by formulae and plasma clearance techniques when one becomes available. There is currently a NEQAS pilot being set up.