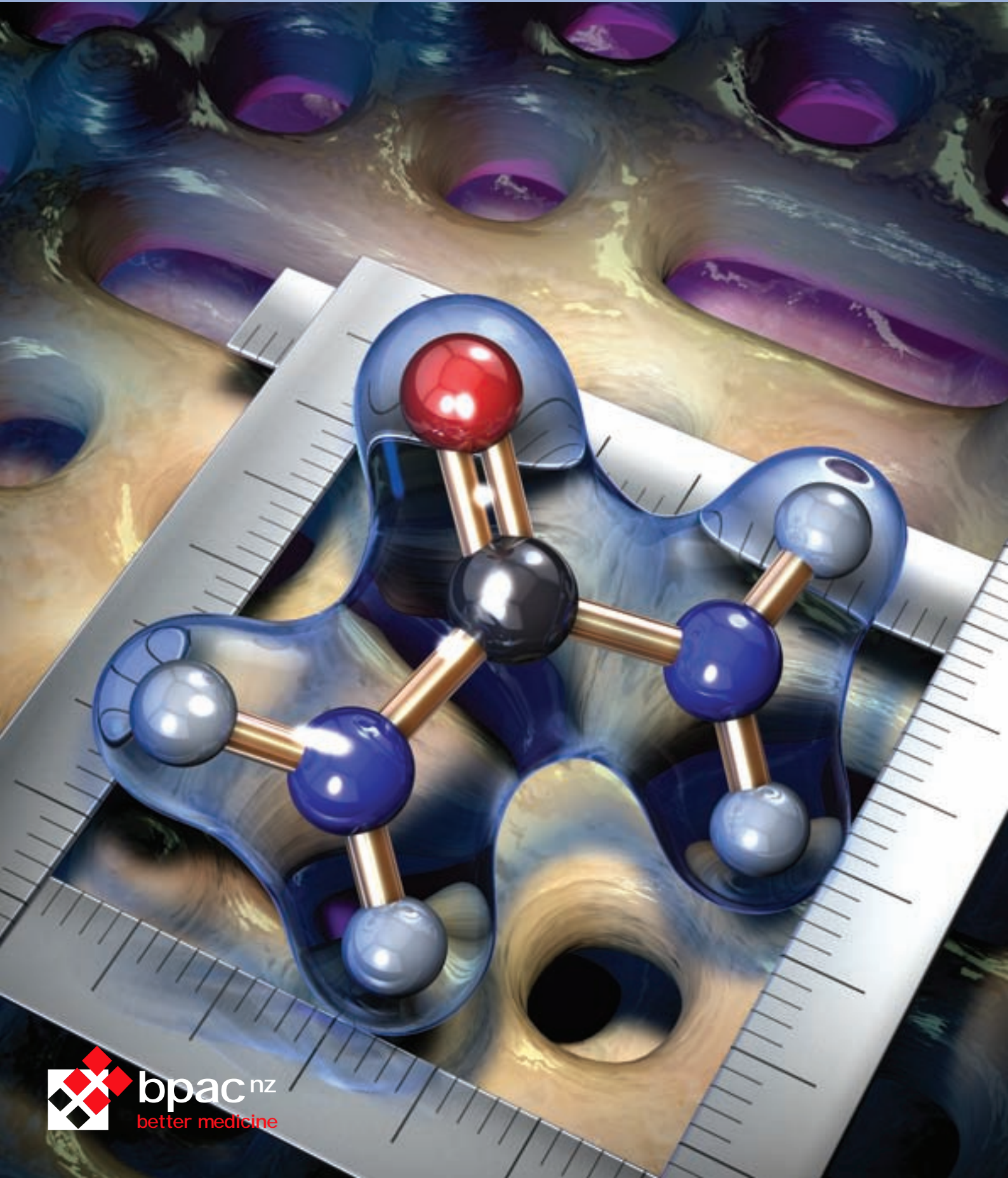


Urea testing

sample personalised feedback report



Limited role for urea testing in primary care

In the past urea was a frequently ordered renal function test, usually requested as part of 'U&E's'. With the introduction of creatinine, and more recently estimated glomerular filtration rate (eGFR), the role of urea as a renal function test has been superceded.

Urea is more vulnerable to change for reasons unconnected to the glomerular filtration rate, making it a less reliable indicator of renal status. A high protein diet, tissue breakdown, major GI hemorrhage and corticosteroid therapy can lead to an increase in plasma urea whereas a low protein diet and liver disease can lead to a reduction. Also, 40-50% of filtered urea may be reabsorbed by the tubules, although the proportion is reduced in advanced renal failure.

In the past a urea:creatinine ratio was sometimes used to distinguish between pre-renal failure and renal causes, but this is now considered unreliable. Instead, a serum creatinine > 250 µmol/L is suggestive of renal cause with 90% probability.

While not indicated as a routine test of renal function, urea is sometimes used for the following specific indications:

Managing dialysis in end stage renal failure

In end stage renal failure (ESRF equivalent to CKD 5), urea levels may be requested by nephrologists. Urea may be used as a proxy measure for the metabolites that accumulate with poor renal excretion causing the symptoms of 'uraemia'. When the decision to use renal replacement therapy has been made, the peritoneal and haemodialysis prescription may be adjusted based on urea levels.

Very occasionally for the assessment of hydration status

Initial assessment of dehydration is best made with clinical, rather than biochemical parameters. Occasionally urea may be helpful for the assessment of dehydration in the frail elderly, when clinical indicators are less reliable.



For further information please refer to Best Tests, December 2009 available from www.bpac.org.nz

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This report focuses on the ordering of urea tests. It is a sample report based on real data.

Table 1 below shows tests used in the routine investigation of renal function.

Table 1:

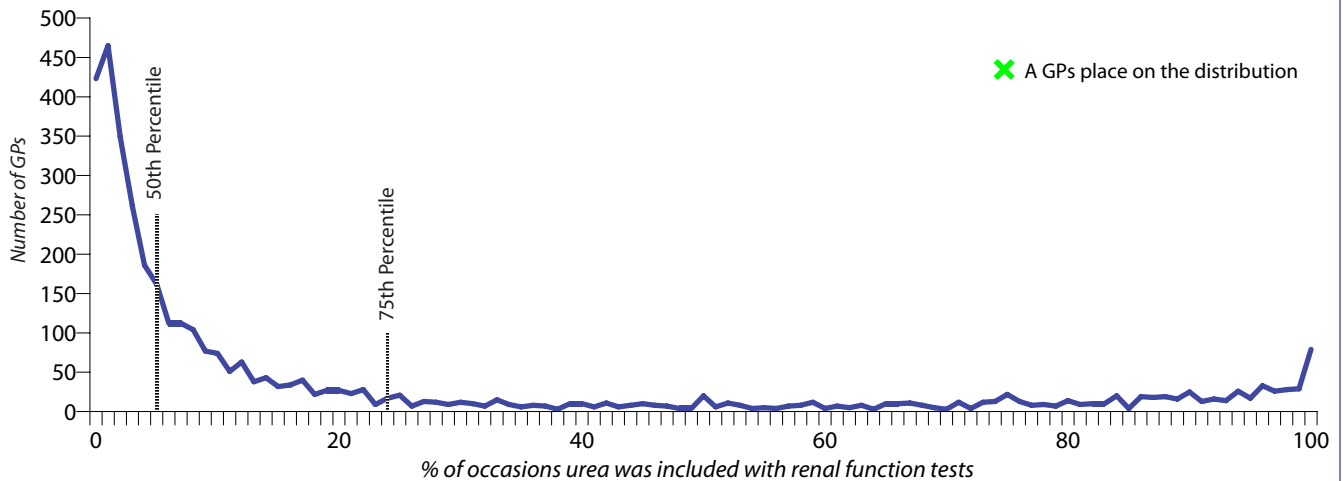
Number of tests 1 August 2008 - 31 July 2009	A GP	National (per GP)
Creatinine, serum		355
Sodium & Potassium, serum		295
Urea, serum		67

On average New Zealand general practitioners ordered 67 serum urea tests over the 12 month time period. Given the very limited role of urea in primary care this appears to be high.

Closer examination reveals considerable variation in the patterns of urea testing by general practitioners.

Figure 1 demonstrates the frequency with which urea is included with other tests of renal function. This is presented as a distribution curve for New Zealand GPs. A GPs place in this distribution is shown by the **x**.

Figure 1: Occasions where renal function tests requested



The majority of general practitioners (75th percentile) included urea on less than 25% of the occasions they ordered renal function tests.

If your ordering of urea is significantly different from your peers this may be an area of your practice to consider auditing. A MOPs approved clinical audit pack is available from www.bpac.org.nz (see over)

Notes

- Time Period is 1 August 2008 - 31 July 2009.
- Data presented in this report is sourced from the NZHIS Laboratory claims database. There is a potential for data entry errors at the laboratory, HealthPAC or NZHIS. All tests associated with an NZMC number will be presented regardless of where they were generated e.g. an after-hours clinic or rest home. Data is assigned to you based on the recorded NZMC number for requested tests. Data has been excluded where the NZMC number was not recorded.
- National figures are based on 3,709 GPs linked to the bpac^{nz} database.
- An occasion was defined as same patient (where the NHI number was recorded), same day and same NZMC within the time period.

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