SUMMARY
Impaired fasting glucose (IFG) is defined as a fasting venous plasma glucose from 6.1 to 6.9 mmol/L inclusive.

BACKGROUND
A recent case from the Royal College of Pathologists of Australasia Quality Assurance Program (RCPA QAP) Chemical Pathology Case Comments program has highlighted uncertainty in the definition of IFG. This uncertainty reflects different definitions supported by different international expert bodies and increases the likelihood that different interpretations may be made for fasting glucose results in different pathology laboratories in Australia and New Zealand.

INFORMATION SOURCES
There are currently two definitions of IFG in use around the world. In 2000, the National Health and Medical Research Council (NHMRC) determined the range to be 6.1–6.9 mmol/L. This value has been agreed to by the World Health Organization and the International Diabetes Federation in a position paper as well as recently by the Australian Diabetes Society and the Australian Diabetes Educators Association and also separately in New Zealand, Western Australia and by the National Heart Foundation. By contrast, the American Diabetes Association recommends a definition of 5.6–6.9 mmol/L. The decision points for all references are based on glucose measured in venous plasma samples using laboratory-based methods.

COMMENT
The likelihood that a patient will develop the complications associated with diabetes increases across the range of fasting gluoses and therefore it is not unreasonable that different bodies might decide on different cutoffs.

The RCPA and AACB support the universal use of the NHMRC definition of IFG in Australia and New Zealand and recommend all laboratories to use this definition in comments related to fasting glucose results.

It should be recognised that although fasting gluoses in the range of 5.5–6.0 mmol/L (‘high fives’) do not attract the label of IFG, results in this range indicate an increased risk for diabetes, especially for patients designated ‘high risk’ (Table 1) who should be followed up with an oral glucose tolerance test (OGTT) and, if no diagnosis is made by the OGTT, then further surveillance with fasting glucose measurements should be made, with the frequency of the measurements dependent on other risk factors, but at least every 3 years in subjects at high risk for diabetes. A fasting plasma glucose is part of a cardiovascular risk assessment and results in the ‘high fives’ may indicate an increased risk and may also be an indicator for lifestyle modification. The investigation and monitoring of patients with fasting plasma glucose in the ‘high fives’ and the definition of ‘high risk’ are the subject of ongoing research and further clarification in this area may be expected in the future.

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EDITOR’S NOTE
This position statement is being published in both Clinical Biochemist Reviews and Pathology to reflect the joint ownership of the document and to
disseminate the information to pathologists and clinical scientists.

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References


