

## International Standardisation of HbA1c and GP Messaging Systems

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Laboratory results, sent electronically through Healthlink and the Regional messaging services, use the Health Level Seven (HL7) version 2.4 standard to ensure interoperability. The specification for how to structure results forms part of the Health Information and Quality Authority (HIQA) GP Messaging Standard ([http://www.hiqa.ie/media/pdfs/General\\_Practice\\_Messaging\\_Standard.pdf](http://www.hiqa.ie/media/pdfs/General_Practice_Messaging_Standard.pdf)).

With the change to a new method of reporting HbA1c on July 1<sup>st</sup> 2010, it is important that the GP Messaging Standard is adhered to in order to ensure that general practice information systems can import and parse the results correctly. Here are the requirements:

1. Laboratories are requested to output standard laboratory text descriptions nationally. The two laboratory text descriptions specified by the HSE HbA1c Implementation Group are:
  - a. HbA1c IFCC
  - b. HbA1c DCCT derived

Please note: this specification does not mandate what an HbA1c investigation is called or how it might be coded, for the purposes of entering a request in a laboratory information system. It is possible that laboratories may use local order codes during request entry. This specification only mandates the text description to go out to the messaging system. Laboratories can continue to use their own laboratory test code or profile name so that the order entry process is not changed.

2. Laboratories must output the results as two distinct results. It is not acceptable to output HbA1c IFCC and put the result of HbA1c DCCT derived in a text note or comment field. Outputting the two results as separate distinct results allows the messaging services to provide the results to GPs as two Observation Result (OBX) segments in the HL7 message.
3. Laboratories are recommended to include a note or comment after the HbA1c IFCC result to alert GPs to the new test. This should be in the form of a note (NTE) after the OBX result for HbA1c IFCC. It is recommended that this note be in place for a six month period. The suggested content is

as follows: Please note dual reporting commenced on the 1st July 2010 and will cease on 31st December 2011. Internationally agreed ranges for both HbA1c (IFCC) mmol/mol format and HbA1c (DCCT) % format are now reported. Please refer to [www.hse.ie/go/diabetes](http://www.hse.ie/go/diabetes) for further information.

4. Laboratories are requested to supply test results for HbA1c IFCC and HbA1c DCCT derived to their GP messaging service to ensure interoperability with the GP practice software systems.

## Notes

In the HL7 XML file, the field Observation Identifier OBX.3 contains the test code and text description. This is a Coded Entry (CE) data type and the format is:

**<test code><text description><name of coding system>**

The following is an example of how this might look in HL7 version 2.4 XML:

**<OBX.3><CE.1>HBA1CI</CE.1><CE.2>HbA1c IFCC</CE.2><CE.3>L</CE.3></OBX.3>**

This indicates that the test code is HBA1CI, the test description is HbA1c IFCC and the coding system is L for local.

## Extract

For laboratory IT staff and GP messaging support staff, here is an extract from a laboratory result message, in HL7 version 2.4 with XML encoding which shows the required structure.

```
<ORU_R01.ORDER_OBSERVATION>
  <OBR>
    <OBR.1>1</OBR.1>
    <OBR.3>
      <EI.1>HC003400Y</EI.1>
      <EI.2>Haematology St Elsewhere</EI.2>
    </OBR.3>
    <OBR.4>
      <CE.1>PMPA1C</CE.1>
      <CE.2>HbA1c Profile</CE.2>
      <CE.3>L</CE.3>
    </OBR.4>
    <OBR.7>
      <TS.1>201005261123</TS.1>
    </OBR.7>
    <OBR.14>
      <TS.1>201005261123</TS.1>
    </OBR.14>
    <OBR.15>
      <SPS.1>
        <CE.1>T034</CE.1>
      </SPS.1>
      <SPS.2>WHOLE BLOOD</SPS.2>
    </OBR.15>
    <OBR.16>
      <XCEN.1>ICE447</XCEN.1>
```

```

        <XCN.2>
            <FN.1>Copy to Clinician</FN.1>
        </XCN.2>
        <XCN.3>Dr.</XCN.3>
        <XCN.4/>
        <XCN.5/>
        <XCN.6> PMIP </XCN.6>
    </OBR.16>
    <OBR.22>
        <TS.1>201005261130</TS.1>
    </OBR.22>
    <OBR.24>HM</OBR.24>
</OBR>
<ORU_R01.OBSERVATION>
    <OBX>
        <OBX.1>1</OBX.1>
        <OBX.2>NM</OBX.2>
        <OBX.3>
            <CE.1>HBA1CI</CE.1>
            <CE.2>HbA1c IFCC</CE.2>
            <CE.3>L</CE.3>
        </OBX.3>
        <OBX.5>40</OBX.5>
        <OBX.6>
            <CE.1>mmol/mol</CE.1>
        </OBX.6>
        <OBX.7>20-42</OBX.7>
        <OBX.11>F</OBX.11>
        <OBX.14>
            <TS.1>201005261130</TS.1>
        </OBX.14>
    </OBX>
    <NTE><NTE.1>1</NTE.1><NTE.2>L</NTE.2><NTE.3>Please note dual reporting
    commenced on the 1st July 2010 and will cease on 31st December 2011. Internationally
    agreed ranges for both HbA1c (IFCC) mmol/mol format and HbA1c (DCCT) % format are now
    reported. Please refer to www.hse.ie/go/diabetes for further information.</NTE.3></NTE>
    </ORU_R01.OBSERVATION>
    <ORU_R01.OBSERVATION>
        <OBX>
            <OBX.1>2</OBX.1>
            <OBX.2>NM</OBX.2>
            <OBX.3>
                <CE.1>HBA1CD</CE.1>
                <CE.2>HbA1c DCCT Derived</CE.2>
                <CE.3>L</CE.3>
            </OBX.3>
            <OBX.5>5.0</OBX.5>
            <OBX.6>
                <CE.1>%</CE.1>
            </OBX.6>
            <OBX.7>4.5-6.0</OBX.7>
            <OBX.11>F</OBX.11>
            <OBX.14>
                <TS.1>201005261130</TS.1>
            </OBX.14>
        </OBX>
    </ORU_R01.OBSERVATION>
</ORU_R01.ORDER_OBSERVATION>

```