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Barcoding OPCS-4 and ICD-10 Codes GS1 UK Implementation Guidelines

May 2018

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About the Healthcare User Group

The Healthcare User Group (HUG) is made up of invited senior representatives from healthcare trade associations, providers, suppliers, solution and service companies and other related organisations. The objectives of the group are:

- To actively support and accelerate the adoption of GS1 standards throughout healthcare, by sharing learnings and best-practice solutions from local implementations
- To help healthcare providers comply with Unique Device Identification (UDI) and Falsified Medicines Directive (FMD) regulations
- To identify and review opportunities that enhance efficiency and patient safety
- To provide feedback and advice on GS1 UK's healthcare plans and activity
- To act as the UK point of contact for the GS1 Global Healthcare Group, and to provide feedback to the GS1 Global Standards Management Process

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1   Background

A number of NHS Acute Trusts have identified a requirement to scan GS1 compliant barcodes to allocate procedure and diagnostic codes within theatres and other areas of the Trust. This paper recommends how this can be achieved.

Coding schemes currently in use within the UK include:

- OPCS-4 procedure codes
- ICD-10 5th edition diagnostic codes

OPCS-4 (OPCS Classification of Interventions and Procedures Version 4) is a mandated information standard used across the UK for submission of aggregated information to national database collections for statistical and epidemiological analysis. OPCS-4 is a vital component of national datasets such as Hospital Episodes Statistics (HES) in England, Patient Episode Data for Wales (PEDW), Scottish Morbidity Records (SMR), Cancer Registries, performance indicators and the NHS payment system. The current version in use is OPCS-4.8. More information about OPCS-4 is available in *Delen*.

ICD-10 is a comprehensive classification of causes of morbidity and mortality and is published by the World Health Organization (WHO). ICD-10 permits the systematic analysis, interpretation and comparison of morbidity data collected in different areas. The specified purpose of the ICD-10 is to provide a means of classifying diagnoses and is defined as a system of categories to which morbid entries are assigned according to established criteria. More information about ICD-10 is available in *Delen*.

There are currently no GS1 global guidelines for barcoding procedure or diagnostic codes. Accordingly, NHS Digital and GS1 UK have worked together to agree these UK guidelines for how OPCS-4 codes should be encoded in GS1 compliant barcodes. In addition, GS1 UK has created these guidelines for how ICD-10 codes can be encoded in GS1 compliant barcodes.

These guidelines have been agreed with both NHS Digital and the Department of Health and Social Care (DHSC).

It should be recognised that these GS1 UK guidelines may at some future date be superseded by global guidelines from GS1 Global following adoption via the GS1 Global Standards Management Process (GSMP).

2　Barcoding OPCS-4 codes

OPCS-4 codes are used in the NHS payment system for the services and procedures carried out by healthcare providers; therefore the GTIN is the most appropriate GS1 key. Accordingly, NHS Digital and GS1 UK have created a GTIN to OPCS-4 code cross reference file which allocates a GTIN to every OPCS-4 code. The DHSC has agreed to use the 5057177 GS1 company prefix to create these GTINs. This file, called GTINsFeb2018OPCS48CodesAndTitlesNov2016V1.0.txt, is available through the NHS Digital Technology Reference data Update Distribution service (*TRUD*), at *https://isd.digital.nhs.uk/*.

OPCS-4.8 Codes and Titles file, also available from the TRUD service, has been used to create the GTIN file. The file provides the full list of OPCS-4 codes past and present and their corresponding descriptions.

The GTINs associated with each OPCS-4 code can be encoded in a GS1 DataMatrix barcode in the normal way as documented in the GS1 UK General *Specifications*.

GTINs used in healthcare are never reused.

2.1　Example

The OPCS-4 code "A05.8" for "Other specified drainage of lesion of tissue of brain" would be encoded in a GS1 DataMatrix barcode as:

0105057177000376

In the above number, the first two digits, i.e. 01, specifies that the subsequent digits represent a GTIN, the next 0 is a filler digit and the following 13 digits represent the GTIN for OPCS-4 code A05.8 as listed in the TRUD file GTINsFeb2018OPCS48CodesAndTitlesNov2016V1.0.txt.

The following image shows an example of how the GS1 DataMatrix barcode might be printed (for illustration only, not to scale)

A05.8

(01)05057177000376

Note the brackets are inserted in the text for readability. There are no brackets in the barcode data.

3　Accessing TRUD Files

To access the files referenced above go to:
https://isd.digital.nhs.uk/trud3/user/authenticated/group/61/pack/10 and set up a TRUD account. Click on "NHS Classifications OPCS-4" and subscribe to the OPCS-4 Systems Data files and the GTIN to OPCS-4 code cross reference file. The licence agreements must be accepted to proceed with downloads. This can all be done online. Then select the NHS Classifications OPCS-4 and click on *Download releases* in the "OPCS-4 Systems Data files" box and the "GTIN to OPCS-4 code cross reference file box". In both cases this will provide a zip file containing the files and a brief guidance document.

4 Barcoding ICD-10 Codes

ICD-10 codes are documented in the International Statistical Classification of Diseases and Related Health Problems (ICD), a medical classification list by the World Health Organization (WHO). This document can be identified by a GS1 Document Type Identifier (GDTI). The particular sections of the document related to a specific ICD-10 code can be further identified using the GDTI serial component.

GS1 UK recommends the use of the Global Document Type Identifier (GDTI) 5057177000002 to identify ICD-10 codes with the serial component being the specific ICD-10 code. The GDTI plus the serial component can then be encoded in a GS1 DataMatrix barcode in the normal way as documented in the GS1 UK General Specifications available at *https://www.gs1.org/barcodes-epcrfid-id-keys/gs1-general-specifications*

GDTIs used in healthcare are never reused.

4.1 Example

If the ICD-10 code were XXX.XX (this is not a real ICD-10 code) then this would be encoded in a GS1 DataMatrix barcode as:

2535057177000002XXX.XX

In the above number the initial 253 specifies that what follows is a GDTI, the next 13 digits identify the GDTI which will be the same for all ICD-10 codes and the final six characters is the serial number containing the actual ICD-10 code.

The following image shows how the GS1 DataMatrix barcode might appear (for illustration only, not to scale):

XXX.XX

(253)5057177000000XXX.XX

Note the brackets are inserted in the text for readability. There are no brackets in the barcode data.

5 Contact details

For queries about GTINs and GS1 barcodes contact the GS1 UK Healthcare Team at *healthcare@gs1uk.org*

Telephone No: 0808 172 8390

For queries about OPCS-4 and TRUD contact the Information Standards Delivery Service Desk at *information.standards@nhs.net*

Telephone No: 0300 30 34 777