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National Interim Clinical Imaging Procedure (NICIP) Code Set
Implementation Guidance

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0.2	21/12/2006	Amended after internal review
1.0	26/01/2007	Final amendments prior to release
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1.2	05/10/2007	Re-draft after initial review
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Related Documents:

These documents will provide additional information.

Ref no	Doc Reference Number	Title	Version
1	NPFIT-SHR-QMS-PRP-0015	Glossary of Terms Consolidated.doc	<enter latest>

Glossary of Terms:

List any new terms created in this document. Mail the NPO Quality Manager to have these included in the master glossary above [1].

Term	Acronym	Definition

Contents

1 About this Document

1.1 Purpose

This document is to support the implementation of the standard National Interim Clinical Imaging Procedure (NICIP) code set.

The NICIP code set can be found in both spreadsheet and tab delimited text file formats in the document "National interim descriptions for Clinical Imaging Procedures" NPFIT-NCR-DES-1091.

The principles on which it is based can be found in the word document "National Interim Standard Descriptions for Clinical Imaging Procedures to support PACS/RIS implementations" NPFIT-NCR-DES-1076.

The NICIP code set has been approved by the Information Standards Board for Health and Social Care (ISB). The Data Set Change Notice (DSCN 27/2009) is now available and can be downloaded from: http://www.connectingforhealth.nhs.uk/dscn/dscn2009/data-set-change/dscn272009.pdf.

This implementation guidance has been created to assist sites with migration to the NICIP code set, and provide guidance to address specific implementation issues on how the codes should be used in practice. It is intended to be iterative and will address new issues as they are identified and will be updated in accordance with the future release schedule.

The guidance is not intended to describe system behaviour or message population for the standard HL7v3 messages to the Summary Care Record.

1.2 Audience

This document has been written for those suppliers and NHS designers working to configure applications used in the clinical imaging domain as well as end users of those systems. It is strongly recommended that the implementation guidance contained within this document is followed and checked for changes with each new release.

1.3 Scope

All conventional imaging modalities are in scope for the use of the NICIP code set.

The NICIP code set provides a consistent description of imaging procedures and a standard terminology for describing aspects of clinical imaging procedures. This facilitates identification of images undertaken in an imaging examination along with the communication of clinical information associated with the identified procedures. These include imaging service requests, patient imaging reports, statistical measures of activity and assisting with workflow aspects of the business of imaging departments such as resource scheduling. Those use cases the NICIP code set supports from the outset are:

- Comprehensive, dynamic catalogue of unique orderable coded imaging procedures to enable accurate, precise ordering of procedures and direct commissioning of services.
- Workflow management and scheduling in imaging departments
- Generation of KH12 radiation monitoring statistics
- Procedure image identification for external viewing

Those use cases not in scope but which may be supported by the NICIP code set are:

- Integrated requesting and results reporting to ordering clinicians/organisations including incorporation of these reports into electronic patient records and electronic ordering of procedures from NCRS systems by utilisation of the direct relationship with equivalent concepts in SNOMED CT.
- Efficient generation of diagnostics HRG data for Payment by Results by traversing the intermediate relationships with SNOMED CT and OPCS-4.5.
- Local clinical audit to determine efficacy of diagnostic tests and interventions by virtue of the comprehensive and precise, consistent descriptions and comparison with other imaging departments
- Local analysis to determine departmental efficiency and inform business planning and resource usage and comparison with other imaging departments.
- Direct booking of procedures from primary care using the equivalent SNOMED CT codes and an extension to the Choose and Book service finding function.

Procedures that are not part of the services offered by clinical imaging departments are also considered to be out of scope for the NICIP code set. An example of this is laboratory tests. Imaging and nuclear medicine non-imaging therapeutic and measurement procedures that have limited representation at present include cardiology, histopathology, endoscopy, clinical photography and ophthalmology.

Representation of any item other than clinical imaging procedures is considered out of scope for the NICIP code set.

1.2.1 National Programme for IT in the NHS (NPfIT)

There are two main work-streams of the NPfIT that are expected to utilise the new NICIP code set from the outset. These are the National Care Record Service (NCRS) and the Picture Archiving and Communication Programme (PACS) and this implementation guidance is focussed upon achieving safe and effective implementation of the NICIP code set to these work streams. It is anticipated that in the future other work streams such as the Secondary Uses Service (SUS) and Choose and Book (CAB) will be able to make use of the code set however such uses currently remain outside of the scope of this implementation guidance. The NICIP code set may not currently meet the requirements of these differing use cases, for

example GP requesting in a primary care setting may not have a requirement for a full range of interventional procedures.

The NCRS will comprise a mix of national and local IT services designed to provide a cradle-to-grave NHS Care Record for each patient, which will transcend traditional care organisations' boundaries.

The PACS programme will deliver applications to support the creation and sharing of digital images and reports across healthcare communities.

The adoption of common standards, including procedure codes, is an essential requirement to enable full interoperability between systems. In the NCRS and PACS, it is recommended the NICIP code set is implemented in the following clinical systems:

Electronic Remote Requesting (ordercomms)

RIS including work flow management

Imaging modalities

PACS

Result Reporting and Acknowledgement

1.2.2 Existing Systems

The SNOMED CT Clinical Imaging Management Group recommend the NICIP code set is used in all integrated clinical application systems. This approach is endorsed by all stakeholders including the Royal College of Radiologists, British Nuclear Medicine Society, British Medical Association, Royal College of General Practitioners, the Society of Radiographers, the Department of Health, NHS Connecting for Health and representatives of the other home countries.

2 Background

2.1.1 Prior imaging procedure lists

Historically, imaging departments have developed their own set of procedure codes to support their local operational and business requirements. Research has shown a lot of commonality between these lists, but there is also significant variance as the lists have evolved to meet local requirements. Whilst this diversity provides local flexibility, it has become an obstacle to wider system integration and interoperability, and limits the ability for sites to collate data across healthcare providers.

In response to this challenge, a number of stakeholders, including the Royal College of Radiologists (RCR), NPfIT and Local Service Providers (LSPs), collaborated to produce a common set of procedure codes and descriptions to support initial deployments in the NHS Connecting for Health PACS programme. This list is referred to as CRS Radiology Catalogue v2.0 (Examination Code Set), NPFIT-LON-LBP-0228.06, or more commonly just as the v2.0 code set. This list has formed the basis of the NICIP code set and now includes additional content and a greater degree of editorial stringency and consistency but follows the same format for the code creation.

This implementation guidance is intended both for those adopting this type of list for the first time and for those moving from the most recently released code set.

2.1.2 NICIP code set

The NICIP code set has been developed as a collaborative effort with formal management arrangements and the participation of all known major stakeholders.

A group has been established to oversee the developments – the Clinical Imaging Management Group (CIMG). This management group reports into the Department of Health National Imaging Board via the National Clinical Lead for Imaging.

The Editorial principles applied in the creation of this list are described in the document “National Interim Standard Descriptions for Clinical Imaging Procedures to support PACS/RIS implementations”, File-CM reference NPFIT-NCR-DES-1076.

The list itself, first released in January 2007 is documented in Excel format in the document “National interim codes and descriptions for Clinical Imaging Procedures”, with File-CM reference NPFIT-NCR-DES-1091.

There are in fact, four versions of the list:

With maps to SNOMED CT and with limited term history information

This version is for those organisations who are migrating from a previous version of the list and use the data in an integrated environment (with systems using SNOMED CT)

Without maps to SNOMED CT but with limited term history information

This version is for those organisations who are migrating from a previous version of the list and do not use the data in an integrated environment (with systems using SNOMED CT)

A simple list of the latest current descriptions without SNOMED CT mappings and without term history information

This version is for those organisations using the list for the first time and do not use the data in an integrated environment (with systems using SNOMED CT)

A simple list of the latest current descriptions with SNOMED CT mappings and without term history information

This version is for those organisations using the list for the first time that use the data in an integrated environment (with systems using SNOMED CT)

2.1.3 Relationship to SNOMED CT

The NICIP code set is designed to bridge the gap until all clinical systems can natively support SNOMED Clinical Terms (CT). In time, when all clinical systems are utilising SNOMED CT, it is anticipated that the representation of DI procedures in NCRS applications will be entirely by the use of SNOMED CT coded concepts.

3 Release Mechanism and Updates

The NICIP descriptions have been designed to be a maximum of 40 characters to enable use in the existing systems that have this constraint. The convention for patterns of descriptions, punctuation, abbreviations and implicit information is described in detail within the Editorial Principles. In order to achieve truncation/abbreviation within the 40 character limit some of the conventions had required the use of special characters (for example:&).

Following consultation and approval from the CIMG, the character '&' was removed from all descriptions to reduce local maintenance requirements and to avoid potential safety and interoperability issues. The word 'and' is used where the meaning of a description is altered by the removal of '&'.

The meaningful code that has been developed for each entry is constructed according to a pattern described in section 4.5 of the Editorial Principles document.

3.1 Distribution

From 1st of October 2009 all supporting documentation and varieties of the NICIP code set, both with and without SNOMED CT mappings, are available from the Data Standards and Products electronic distribution service (also known as TRUD) and can be obtained electronically by registering on line at www.uktcregistration.nss.cfh.nhs.uk.

In order to utilise the mappings to SNOMED CT, all recipients must be SNOMED CT license holders – there is the facility to sign up for a SNOMED CT license at this site which is free of charge. All NICIP supporting documentation, including this implementation guidance, will be also be made available via the NHS Connecting for Health website:
http://www.connectingforhealth.nhs.uk/systemsandservices/data/terminology/imaging

3.2 Update frequency

The first release of the NICIP code set took place on January 26th 2007.

Since then the NICIP code set has been, and will continue to be updated to reflect the dynamism of clinical practice.

In order to fully integrate with the NCRS mandated standards for interoperability, the relationship to SNOMED CT must be synchronised.

The second NICIP code set release coincided with the October 2007 SNOMED CT release. Biannual releases occur on the 1st April and 1st October every year thereafter. This implementation guidance will be updated periodically to coincide with releases of the NICIP code set.

It is important that all connected systems use the same version of the NICIP code set and that they all are updated synchronously and as near to the most recent release date as possible. The NICIP code set has now been approved by the Information Standards Board for Health and Social Care (ISB). The DSCN (27/2009) requires

each organisation using the NICIP code set to update to the most recent version within 2 months of its release date.

3.3 Safety Considerations

Responsibility for deployment and implementation of the NICIP code set is devolved to local level, with updated safety guidance for implementation available with each release. All mapping between PACS and RIS systems must undergo local testing and assurance to ensure data integrity, and the testing should be reassessed at each interim update. SNOMED CT compliant systems MUST support full post coordination mapping on the code sets in order for the SNOMED CT codes to be used as the primary key for each full post coordinated concept in the list (i.e. including the laterality codes). Where systems cannot fully support post coordination, the NICIP procedure codes may be utilised to map concepts between systems.

It is mandated for in scope use cases for organisations to update to the most recent version of the NICIP code set as soon as possible after each release and no later than 2 months after the formal release date. The full NICIP code set, rather than extracts from it, should be updated with each new release to prevent inconsistencies when receiving information from other organisations. This action will also prevent inconsistencies where there have been small changes made to some representations, such as capitalisation, without retiring the code.

Any actions taken locally to address issues specific to local PACS/ RIS systems, must be the subject of a local safety assessment. It is also important that each organisation implementing the NICIP code set has a local method of data validation in place. Where local modifications are made, responsibility for the safety and integrity of such changes will remain local.

3.3.1 Clinical Safety Incident Reporting (CSIR) Procedure

Incidents with potential implications for clinical safety identified with implementation of the NICIP Code Set will follow the existing Clinical Safety Incident Reporting Procedure.

It is essential that clinical risk issues and incidents are reported to **both** the clinical safety helpdesk and also the Data Standards and Products help desk. Reporting in this manner will facilitate an assessment of the impact of any identified issue of clinical risk on the standard as a whole.

Contact:

safety.incident@nhs.net

datastandards@nhs.net

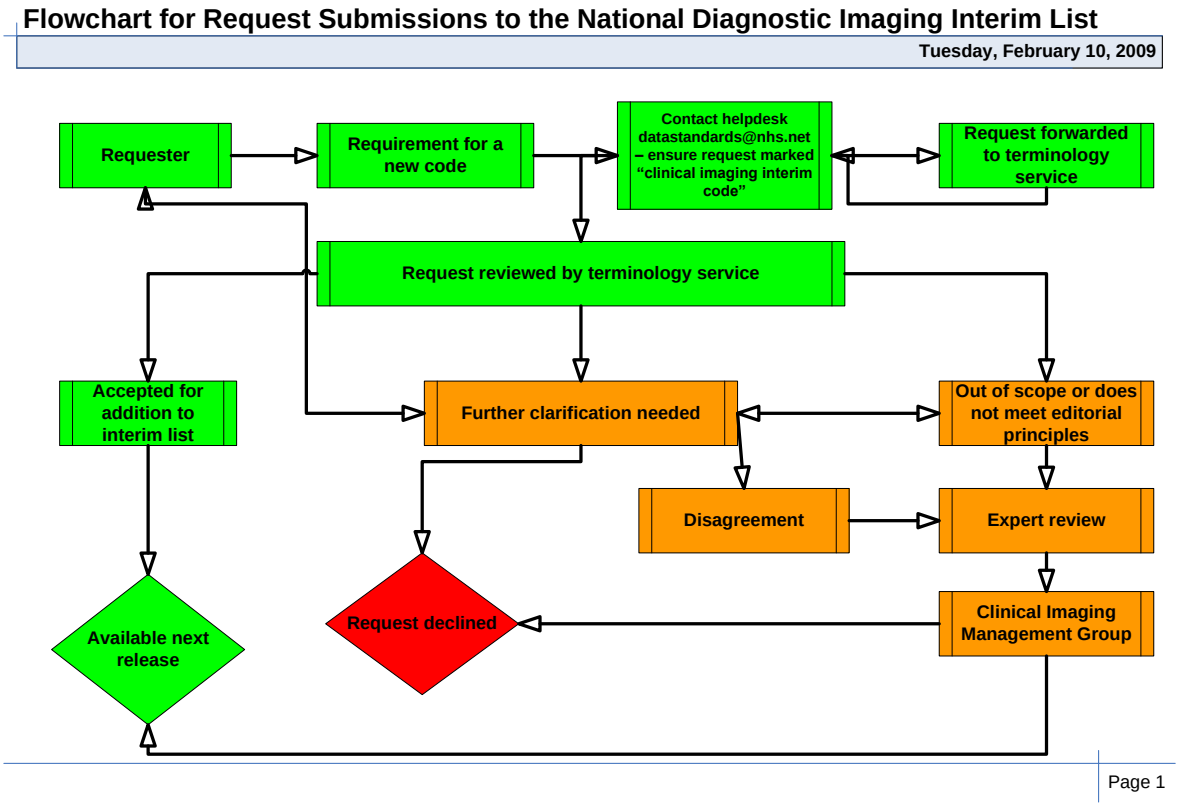
All safety issues discovered with non-live applications (assuming supplier verifies that the defect isn't also present in any live application version), cannot present hazards to real patients and will not be reported as safety incidents. They will however be reported as serious (normally severity 1) defects and resolution tracked before go-live.

3.4 Requests for change

Requests for change or notifications of errors should be submitted to the NHS Connecting for Health Data Standards and Products helpdesk – datastandards@nhs.net. Submissions will be directed to the appropriate level of support and requestors should ensure that the fact that it is a "Diagnostic Imaging" enquiry be clearly communicated to the operator. Information regarding the level of detail required and frequently asked questions when making a request for additions can be found on the website: http://www.connectingforhealth.nhs.uk/systemsandservices/data/terminology/imaging

Limited resources are available to make changes so all requests will be prioritised according to guidelines established by the CIMG. Requests for change to the implementation guidance or editorial principles should be submitted through stakeholder representatives on the CIMG.

Addition of new content will need to cease some considerable time before the release date to allow sufficient time for data preparation and review of release artefacts. It may be possible in limited circumstances to add a new NICIP code after authoring for SNOMED CT has ceased for a particular release. However this will only be possible where a new request can be mapped to an existing procedure code within SNOMED CT and where the new request fulfils the stipulations of the editorial principles.



4 Technical Considerations

4.1 Migration from existing code sets

4.1.1 Migration to the NICIP code set from a local code set

It is mandated for in scope use cases that all clinical imaging centres in the UK adopt the NICIP code set. This will inevitably require the replacement of any current local procedure codes.

It is a local decision whether to attempt to map the former code system to the new NICIP representation – to aid analysis of old and new data together for instance – or whether to end date (retire) all existing codes and start afresh with the new NICIP codes. In either case, only the approved NICIP code set should be used for new data entry (see section 4.2.1 on mapping existing procedure codes).

Where local codes are replaced with a NICIP equivalent an audit trail must be retained to ensure that local codes remain meaningful in the historical data within the clinical system.

4.1.2 Migration to the new NICIP code set from a previous version (including the 'v2.0' code set)

It is important to note that where only a minor change has been required to a description to comply with editorial principles, the same code will continue to be used with the new description.

To assist with the migration process, all old codes and descriptions will be maintained and linked to their replacements.

It is a matter for the local implementers to decide which of the available descriptions (synonyms) to make available to their local users. It is also permitted to introduce additional local descriptions as long as they are linked to the NICIP codes and descriptions, refer to exactly the same concept as the NICIP code, are clinically synonymous and are not a refinement of it.

4.1.3 Timing of migration to the NICIP code set

It is mandated for all in scope use cases that all sites migrate to the updated NICIP code set as soon as is practicable after its release. Where systems are integrated, migration should be coordinated to enable switch over to the new data set across all systems at the same time. For strategic based services, such as the SHA based radiology information systems, this will require cooperation between all participating organisations to minimise any downtime and risk of system errors due to non-matching codes in the interfaced systems.

4.2 Mapping Procedure Codes

4.2.1 Mapping to existing local procedure codes and descriptions

Only approved NICIP codes should be used in communication between systems. Sites may implement the NICIP description or an approved synonym from the national list.

Sites may map their existing codes to the new NICIP codes. This may require a data migration exercise whereby all references to an existing code within the system are replaced with the corresponding national code. E.g. A local code *C01 Chest X-ray* would be updated to *XCHES Chest X-ray* throughout the system. If a system is capable of recording more than one procedure code per procedure, the new NICIP code can be used in addition to the local code providing it is the NICIP code that is used in communication with other integrated systems.

When mapping individual codes, sites should follow the local implementation guidance (section 5.1). If there is no corresponding NICIP code, the local code should be end dated so it cannot be used for new data entry.

Any organisation wishing to retain their own local codes and descriptions, including Read codes, should undertake a risk assessment to determine the impact on interoperability with interfaced systems, and any clinical risk that may ensue.

4.2.2 Mapping to SNOMED CT

To support eventual migration from the NICIP code set to SNOMED CT, a mapping from each entry to a corresponding SNOMED CT concept has been developed. All NICIP codes now map directly to an equivalent concept within SNOMED CT. With the exception of OPCS-4.5 no support will be provided for mapping from the NICIP code set to other code systems (including Read codes). The current NICIP mapped representation list can be obtained through the approved release mechanism route (see 3.1 above). Any request for change to the mapping should be submitted via the national route. The release dates for the updated products (NICIP code set and SNOMED CT) have now been synchronised to facilitate the process of mapping.

It should be noted that where items in the NICIP code set terms include laterality, this additional information will not be directly incorporated in pre-coordinated SNOMED CT. The release table has additional fields equivalent to the post-coordinated representation which must be used to fully describe the procedure within SNOMED CT. For further information please refer to the IHTSDO publication on ‘implementing SNOMED CT’

http://www.ihtsdo.org/publications/implementing-snomed-ct/

Eg

CANKL, CT Ankle Lt maps to 241575006 CT of ankle, **plus** 272741003 Laterality =

7771000 Left

Editorial principles for the domain of Diagnostic Imaging Procedures in SNOMED CT have been drafted to clarify both term construction and modelling and are currently

(as of October 2009) out for consultation with the Members of the International Health Terminology Standards Development Organisation (IHTSDO).

The structure of the imaging procedure concepts in SNOMED CT is rather more complex than in the NICIP code set with additional properties needing to be defined in order to conform to the concept model and term construction rules.

Also, some of the constraints of the systems the NICIP descriptions were developed for are not restrictive to the same degree in SNOMED CT.

IHTSDO guidance requires all abbreviated terms to be fully expanded within SNOMED CT. No abbreviations will be allowable within the fully specified name. For the preferred term it has been agreed that abbreviations will be allowable where the abbreviation is documented within the Editorial Principles as an exception. For all other cases the abbreviation will be followed by the fully expanded term in brackets. This will aid searches using abbreviated terms.

Example: CT (computed tomography) of abdomen.

The key differences between the NICIP code set representation and SNOMED CT are illustrated in the following table:

Interim representation	**SNOMED CT**
40 character description limit	255 character description limit
Synonyms permitted	Synonyms permitted
6 character alphabetic codes	12-18 character numeric codes
Fully enumerated	Possible to further qualify concepts (eg ‘urgency’)
Laterality explicitly included (3 variants – left, right, both)	Laterality post-coordinated
Many aspects ‘implied’ (see editorial principles)	Implied meaning not permitted
Flat list	Hierarchical relationships
Modality defined my first character of code	Modality defined by ‘method’ attribute
Abbreviations allowed from an agreed list of abbreviations, acronyms, truncations.	Abbreviations not permitted. All acronyms or abbreviations must be fully expanded.
Limited history mechanism, concepts never removed	Full component history, concepts never removed

4.2.3 Mapping to OPCS-4.5

To support current and future data collection in all imaging departments, a mapping to OPCS-4.5 will be maintained. As new content from the NICIP code set is added to SNOMED CT, a map to OPCS-4.5 will routinely be assigned as part of the process. All procedures within the NICIP code set now have a direct map to an equivalent SNOMED CT concept. A preliminary mapping table from diagnostic imaging codes to

OPCS-4.5 is now available for download and is being made available as test data only. The NICIP Mapping Table to OPCS-4.5.5 (Version 3.0) is only available from the NHS Connecting for Health Data Standards and Products electronic distribution service (also known as the TRUD service). It can be obtained electronically by registering on line at www.uktcregistration.nss.cfh.nhs.uk

4.2.4 Mapping codes to Körner codes

As per notification in April 2010, Körner bands have been removed from the October 2010 NICIP code set release and will no longer be maintained or distributed with any future releases.

4.2.5 Mapping for KH12 returns and body part multiplication factor

Clinical Imaging departments are required to submit KH12 returns to the Department of Health. To facilitate automation of this process, each procedure in the NICIP representation, where appropriate, has been given a suggested map to the relevant KH12 modality grouping and body part multiplication factor for KH12 returns. Any identified inconsistencies, queries or requests for change to the mapping should be submitted via the data standards and products helpdesk route (datastandards@nhs.net).

It is important to note that this mapping is indicative only and has not been formally validated, please exercise caution in use.

4.2.6 Interventional flag

It is necessary in KH12 mandatory returns to indicate whether a particular examination was interventional in nature. The list includes a flag to indicate whether each examination was indeed considered interventional or not.

This flag is possibly contentious in some examples however it is the opinion of the CIMG that providing all organisations utilise the same scheme then the advantages of having consistent returns outweigh the potential disadvantage that a small number of the flags may be assigned incorrectly.

There is also a field to indicate whether a procedure is considered to be diagnostic.

For the purposes of this return, a procedure is considered to be interventional in nature if it effects treatment of the patient. Although some interventional procedures often have a diagnostic element it is not permissible for any procedure to be marked as both diagnostic and interventional.

4.2.7 Mapping to Imaging Acquisition Protocols

The NICIP codes are not intended to map 1:1 with imaging acquisition protocols. Acquisition protocols can vary more widely, and the protocol performed may depend on local clinician's preferences, the patient's diagnosis and condition, and the imaging equipment used.

Some procedures may only have one matching acquisition protocol, but others map to several different imaging protocols. In CT scanning for example, there are a large number of different acquisition protocols covered by relatively few procedure codes *e.g. CT abdo/pelvis*. The imaging acquisition protocol should be determined when the requested procedure is justified, based on the full clinical information in the request. Some systems support procedure mapping enabling users to select one of a range of acquisition protocols appropriate to an imaging procedure.

5 Clinical and Business considerations

5.1 Local Implementation Guidance

5.1.1 Local Tailoring

Many prior lists were administered locally, with few requirements for detailed procedure information to be shared or collated across organisations. Administrators were able to make changes to the local list as and when the perceived need arose. The implementation of a National data set for clinical imaging procedures will restrict the ability to incorporate local changes.

There will be occasions when a procedure is required but has not yet been incorporated in the NICIP code set. In this instance the procedure could be coded as a more general procedure, but also submitted to the data standards helpdesk for consideration for addition to the national list. National codes are not provided for research/experimental/prototype tests until their mainstream use is proven. In such circumstances it may be appropriate to utilise a local code.

Where code extensions are possible locally, each new procedure description could be appended to a national, more general, procedure.

Where code extensions are not possible locally, if a local code is used whilst awaiting consideration for addition to the NICIP code set, then the structured code should commence with a Z to indicate very clearly it is not part of the NICIP code set. If the procedure is subsequently successfully accepted into the NICIP code set then a link must be maintained from these temporary code entries to the new NICIP code. Where the item is not accepted, it should be replaced by the nearest National equivalent for anything other than local use.

These codes, whether “temporary local” or “permanently local” should not be communicated outside the local system.

For instance, a new examination, ‘Fluoroscopic angiography and embolisation of palmar artery’, is developed. This would be represented prior to submission and approval on the NICIP code set with the code for ‘Fluoroscopic angiography and embolisation of upper limb artery’ or as ‘Fluoroscopic angiography and embolisation of palmar artery’ with a code commencing with a Z (which must not be a duplicate of any other local code).

Similarly, where local codes are required to support the local business or workflow of an imaging department then the local code must commence with a Z to indicate very clearly it is not part of the NICIP code set. These codes should not be communicated outside the local system and must be unique within that system.

5.1.2 Administrative Procedures

It has been agreed that the NICIP representation will be comprised of only the clinical aspects related to the technique of the procedure rather than any administrative properties.

Other factors which are necessary to support the business of the individual clinical imaging departments such as 'location' (eg on ward, in theatre), report status (eg unreported) and visit number (eg bowel transit study – 3rd visit) are excluded from this representation.

5.1.3 Laterality

Many procedure descriptions have already been pre-coordinated with a laterality of Lt, Rt or Both. The 'Both' description should be used whenever both sides of the lateralisable object are acquired and reported as a single examination. For example a procedure where bilateral nephrostomies are performed should be entered as 'Nephrostomy Both'. If the patient attended for a right nephrostomy and then subsequently for a left nephrostomy and they are reported separately, then they should be entered as 2 separate procedures (Nephrostomy Rt and Nephrostomy Lt).

5.1.4 Contrast

For some procedures the use of radiographic contrast media is implicit in the procedure description (eg angiography). Where contrast use is not implicit, only the variants 'with contrast' and the base procedure with no mention of contrast – eg 'CT brain with contrast' and 'CT brain' will both exist as separate codes. A patient having a procedure 'with and without contrast' (e.g. a CT brain scan) should be coded as a single procedure 'with contrast' unless the procedure is performed as 2 separate examinations and reported separately.

Where contrast is not specified then it should not be implied that contrast was not used. In procedures such as angiograms and other examinations which are always performed with contrast the use of contrast is implicit.

The exception to this rule is MR Angiography where delineation of the blood vessels can be accomplished by other means. In these cases when contrast is utilised it must also be specified in the description.

It should also be noted that the generic description of "contrast" (when not further qualified), actually means intravascular contrast.

5.1.5 Multi-modality examinations

The general principle is that when an examination is performed and reported as a single examination, it should be recorded by a single procedure code. As such a multi-modality examination should be coded by a single procedure code where possible. For example a barium enema using fluoroscopy and computed radiography should be recorded as a single barium enema examination with a single procedure code.

It follows that where a multimodality exam could be described by more than one modality procedure code, then only the dominant modality should be recorded. For example a nephrostomy using fluoroscopy and ultrasound would be coded using either Fluoroscopic Nephrostomy or US Nephrostomy. If the procedures are performed and reported separately however, then both procedure codes should be entered.

In the case of PET/CT and SPECT/CT it is important to use the combination descriptions to differentiate the procedure from routine PET and SPECT.

5.1.6 Multi-body part examinations

The general principle again is that when an examination is performed and reported as a single examination, it should be recorded by a single procedure code. For example an ultrasound of the abdomen including the liver, spleen and kidneys should be recorded as a single code for ultrasound of the abdomen, rather than as separate procedure codes for each body part.

For CT and MR examinations, the NICIP code set includes codes for individual body areas (e.g. CT Thorax) and a number of common combined area procedure codes (e.g. CT Thorax Abdomen Pelvis). As with other multi-body part examinations, a single procedure code should be used where possible. Where an appropriate multi-body part code does not exist, the procedures may be coded separately under the same attendance event (e.g. CT Brain, and CT Thorax Abdomen Pelvis). In this situation, images may be acquired under the appropriate body part code by selecting each procedure code in turn from the worklist.

5.1.7 Imaging to support interventional procedures

If the imaging is considered to be a full equivalent diagnostic procedure that takes place alongside the interventional procedure then it should be coded as two procedures ‘the imaging’ plus ‘the imaging guidance for the intervention’. If the imaging was simply to assist or guide the intervention then the format would be ‘imaging guided interventional procedure’.

For example, including full diagnostic scan:

US Breast Left

US Guided FNA breast Left

If the scan is not of full diagnostic quality that procedure would be omitted.

US Guided FNA breast Left

5.1.8 Procedures with unspecified body site

Almost all DI procedures will have a target ‘site’ for the imaging, whether this be a discrete body part or a complete subsystem.

There will be, however, be a number of procedures where the multitude of possible sites for performing a CT biopsy on, for instance, that it would be impractical to pre-coordinate all possible combinations.

In these cases the generic description CT biopsy would be used with some other way of indicating what the site was – this could possibly be an additional text field which might mean the site is only captured in the report if that is the only field available.

Other examples of such procedures follow:

Injection under US control

Intravascular foreign body retrieval

Linogram

5.1.9 Import and Review of Outside Imaging

Prior code sets have included administrative codes for import and review of 'outside' imaging performed at other organisations. Although it is important to capture this activity, these codes do not adequately describe the actual imaging procedure that is being imported and reviewed. It is therefore recommended that all procedures are entered as the imaging procedure (e.g. CT Thorax) and the fact that this imaging was performed elsewhere is captured in the imaging location field. For example the imaging procedure imported (e.g. thorax) could be assigned to a room 'outside imaging'. The room location can then be used in management reports to distinguish local from externally performed procedures.

Using the actual imaging procedure also ensures the imaging procedure description on RIS will match the imaging procedure on PACS. The intention is that the creation of new RIS entries for imported procedures can then be automated in future, using international standard workflow (IHE import reconciliation workflow – see http://www.ihe.net/).