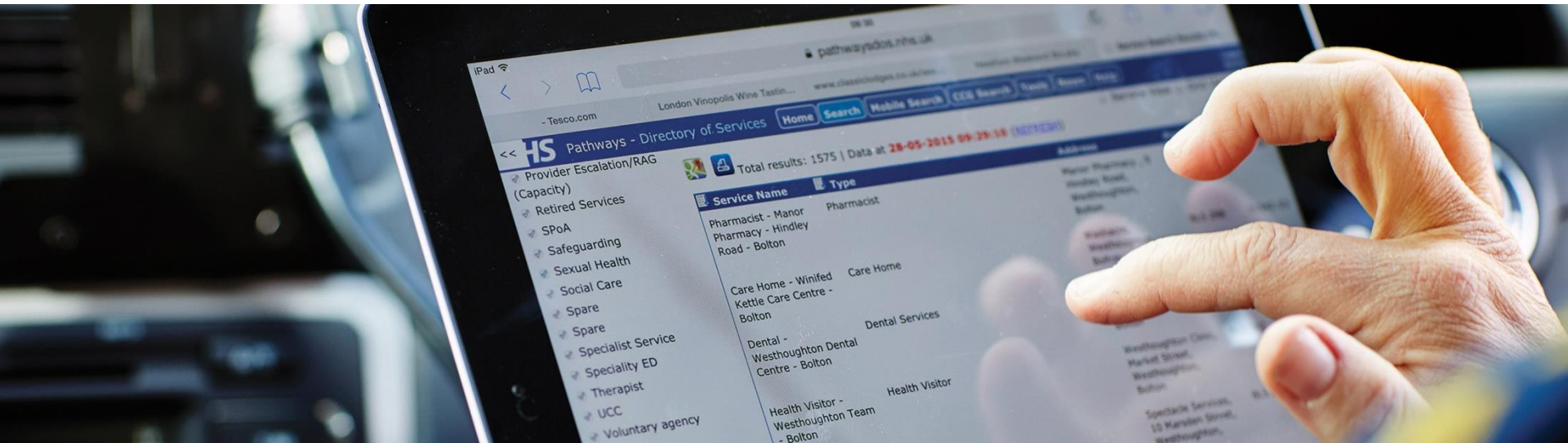


United Kingdom National Release Centre and Implementation of SNOMED CT



Information and technology
for better health and care

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Advanced Terminology Specialist
Terminology & Classifications Delivery Service

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- NHS Overview
- NHS Terminology and Informatics Strategy
- Primary Care and SNOMED CT in England
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- SNOMED CT Education and Training Resources

NHS Overview (England)

NHS organisations in England

- 154 Acute Trusts
- 56 Mental Health Trusts
- 37 Community Providers
- 10 Ambulance Trusts
- 7,875 GP Practices
- 209 Clinical Commissioning Groups (CCG's)

NHS employs (England)
150,273 Doctors
377,191 Nursing Staff



National terminology strategy in England

- SNOMED CT is the approved information standard for England and part of statute/law that it is implemented
- England's national strategy = deploy SNOMED CT widely across health & social care estate, this includes diagnostics
- For an interoperable EHR which travels between systems on one standard clinical terminology
- Links with the NHS Informatics Strategy for England & **Information Standards Notification**
- **Supports Paperless 2020 and Five Year Forward View**

Information Standard Notification (ISN)

- [SCCI0034 Amd 35/2016](#)
- ‘SNOMED CT is the information standard for clinical terminology’
- Information Standards Board decision in **2011**
- Updated support information January 2018
- Implementation of SNOMED CT by **2020**
- **Applies to all IT systems used in the direct management of health and care**

Update 18th January 2018

- **Update 18 January 2018: SNOMED International update regarding LOINC (from the SNOMED International Business Meeting, 19-20 October 2017, Bratislava)**
- In October 2017, SNOMED International ratified the UK requirement for developing content in specific areas of pathology and laboratory medicine and ratified the application of clause 5.2 of the IHTSDO-Regenstrief collaboration agreement (2013).
- This development reinforces the Department of Health and Social Care mandate for the implementation and use **of SNOMED CT as the clinical terminology for use in health and care clinical systems across the NHS**. It means that SNOMED CT can be used in all areas of pathology, including laboratory sciences and other diagnostics; thereby removing the need for NHS Organisations and their suppliers to use LOINC.
- The Data Coordination Board endorse this approach, recognising the benefit of supporting the consistent development of SNOMED CT content across all areas of pathology and diagnostics.
- <http://content.digital.nhs.uk/isce/publication/scci0034>

Information updated because of UK Specific Issues

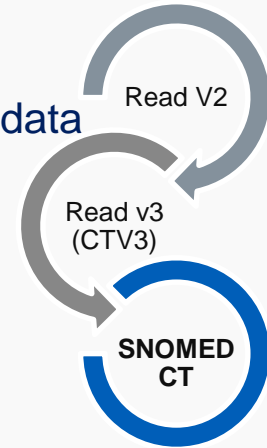
- Introduction of any different terminology in diagnostics or other domain areas
 - would significantly increase the complexity of rolling out SNOMED CT in primary care
 - jeopardise the semantic interoperability of the electronic health record and costs of implementation
 - Not meet the future needs of the whole pathology estate (e.g. point of care testing, screening programmes, interpretations of results, cancer reporting)
 - Cause the need for more sub products (e.g. mappings) and introduce more translation actions (potential safety risk)
 - Support for multiple terminologies = increased costs
 - Increase local mapping burden & complexity

Primary Care background

- Primary care has had electronic records since the 1980's
- Read codes used in clinical systems V2 and CTV3 as Terminology
- Many primary care processes use Read codes
e.g. Quality and Outcomes Framework (QOF) for Payment and national data returns

Name: Smith	First: John		
Date	Dr	Code	Note
20/1/83	AB	H33..	Asthma
		137R.	Smoker
		12C5.	Family
7/5/84	CD	TE60.	Dog
		6561.	F
18/6/84	PN	6562.	Second teta
1/9/84	AB	F527.	Acute right otitis media
1/12/84	CD	F526.	Acute left otitis media

F.... Nervous system (& sense organ) diseases
F5... Ear diseases
F52.. Suppurative and unspecified otitis media
F520. Acute suppurative otitis media
F521. Chronic tubotympanic suppurative otitis media
F522. Chronic atticoantral suppurative otitis media
F525. Recurrent acute otitis media
F526. Acute left otitis media
F527. Acute right otitis media
F528. Acute bilateral otitis media



UK NRC has been authoring Read V2, CTV3 and SNOMED CT in unison and mapping between Terminologies

Why move from Read to SNOMED CT?

- Early versions of Read codes based on designs that were limited by software applications and capabilities at the time (1980s) within specific systems
- Read codes - **primary care** focused (mainly General Practice)
- Read V2 - **fixed single hierarchy** with a maximum of **five levels** of detail
 - Hugely **congested content**
 - has **no formal definition**
 - **Code-based hierarchy** - errors cannot be corrected without changing the code
 - Harder to do all inclusive queries for secondary uses

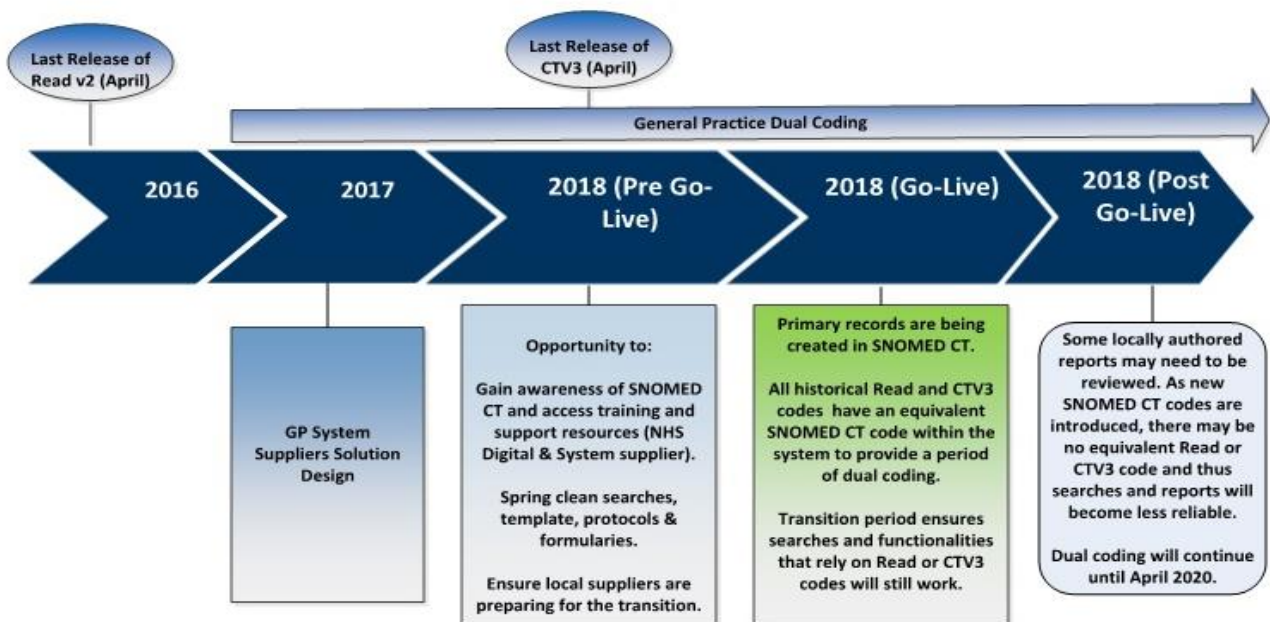
Why move from Read to SNOMED CT ?

- CTV3 full benefits and development have **not been fully exploited**. Only one system supplier uses CTV3
- NHS Digital maintained and developed **three terminologies** including SNOMED CT - as well as mappings between them
- One request for Read V2 used to equal 3 additions to allow subsequent migration
- Read codes - **UK specific Terminologies**
- To advance from Read using technology capabilities of systems today

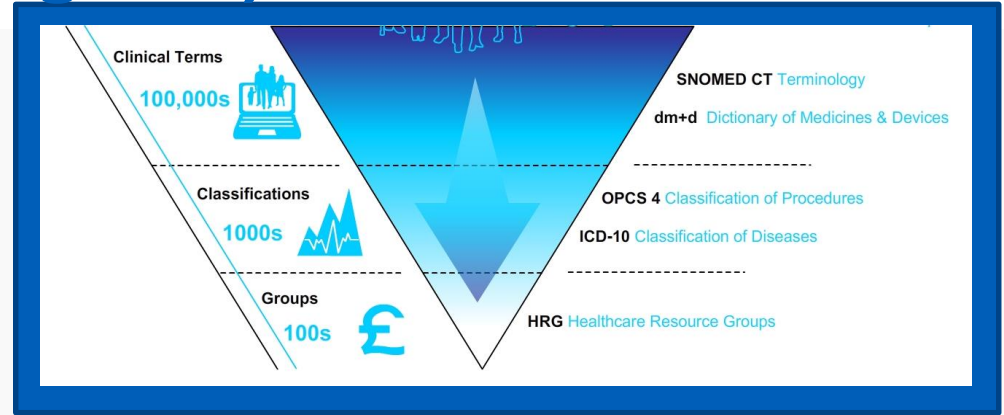
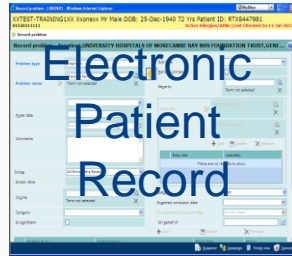
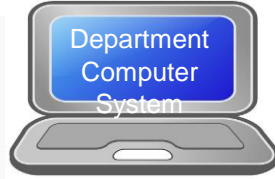
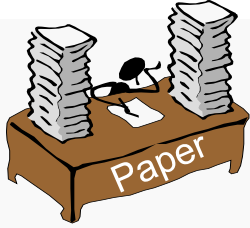
Primary Care Implementation Update February 2018

- SNOMED CT (replacing Read codes) being used from April 2018
- SNOMED CT is now being introduced in **phases across primary care**
- **Action** is following feedback to minimise disruption at financial year-end
- NHS Digital are working closely with clinical system suppliers to support a smooth transition.
- First phase of deployment started with approximately 20 supported pilot sites across all principal supplier systems.
- Following successful completion of this first phase, suppliers will inform practices of their deployment dates and provide training on the system functionality.
- **This is supported by the specific SNOMED CT in primary care team**

Primary care SNOMED CT implementation timeline



Secondary Care (England)



- Currently a mixed Economy
- Electronic Clinical data captured by using
 - Free Text
 - Local Codes
 - Terminologies including SNOMED CT
 - Classifications (statistical and for payment)
- Data Sets - Commissioning/Reporting
- Data Standards Assurance Service approval of information standards data collections and data extractions
- Must always use SNOMED CT for every new data collection where applicable

Why move to SNOMED CT across all sectors?

- SNOMED CT implemented across the care system enables cross sector interoperability, reducing clinical safety risk due to potential data loss on mapping between different terminologies
- Is a computable terminology with formal definitions - useful for analysis and consistent domain localisation e.g. subset development
- History Mechanism – can be updated and changed safely
- International
- Links with other international standards
- Has Editorial Governance
- Datasets and national collections can be based on the recording terminology
- Decreased costs of maintaining and implementing more than one product
- Supports transfers of care between different systems and services
- [International implementation guidance](#)

UK National Release Centre Overview



Help support effective implementation of SNOMED CT with content and products

Manage requests for change / addition to SNOMED CT

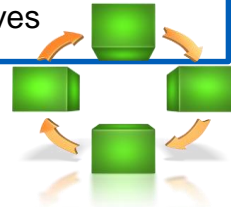


Primary contact point for SNOMED International regarding all aspects of management of SNOMED CT

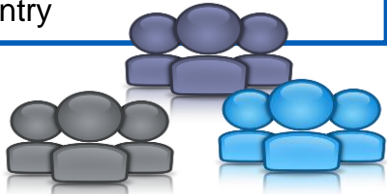
UK NRC of NHS Digital



National distribution and licensing of SNOMED CT and derivatives



Primary contact point for Affiliate licence holders in the country



Produce and distribute a National SNOMED CT Extension – The UK Edition



UK National Release Centre

- Holds UK member role for SNOMED International on behalf of the United Kingdom's four countries
- Part of Information Representation Services, NHS Digital
- Several teams involved
 - **Clinical Terminology Service** including pathology
 - Pharmacy Terminology Service
 - Classifications service
 - Technical Services

Clinical Terminology Service

- **Terminologists:**
 - 1.2 Principal Terminology Specialist
 - 1 Senior Terminology Specialist
 - 4 Advanced Terminology Specialists
 - 1 Clinical Data Standards Specialist
 - 6 Terminology Specialists
 - 2 Junior Terminologists
- **Underpinned by support functions such as:**
 - **Service Management**
 - **Digital Delivery Service: technical support outside of the team**
- Other advanced terminology staff in other areas of NHS D such as primary care implementation and messaging

Maintaining the relationship with the International Edition

- The UK has been managing a National extension since 2001- called the UK Edition
- A complete UK Edition of SNOMED CT comprises the most recent:
 - Biannual International Release,
 - **Biannual UK SNOMED CT Clinical Extension** and
 - Four weekly UK SNOMED CT Drug Extension
- Requests for change are received for products and related artefacts continuously
- The objective is to accommodate these changes in a timely way to optimal quality

Type of content in the SCT UK Clinical extension

- UK specific concepts for use in the clinical record
 - 986511000000101 | Active serving member of the Royal Navy (occupation)
 - 981241000000105 | Assessment by Approved Mental Health Professional under the Mental Health Act 1983 (England and Wales) (procedure)
- Pre-coordinated content (currently) considered unsuitable for the International Edition
 - 1042601000000103 | Primary transumbilical augmentation mammoplasty using less than 100 ml submuscular expander (procedure)
- Content considered suitable for the International Edition but authored into the UK Extension first
 - 1086211000000109 | Assessment using Clinical Opiate Withdrawal Scale (procedure)
 - 1082781000000106 | Injection of carpometacarpal joint using fluoroscopic guidance (procedure)

Other UK NRC Products include..

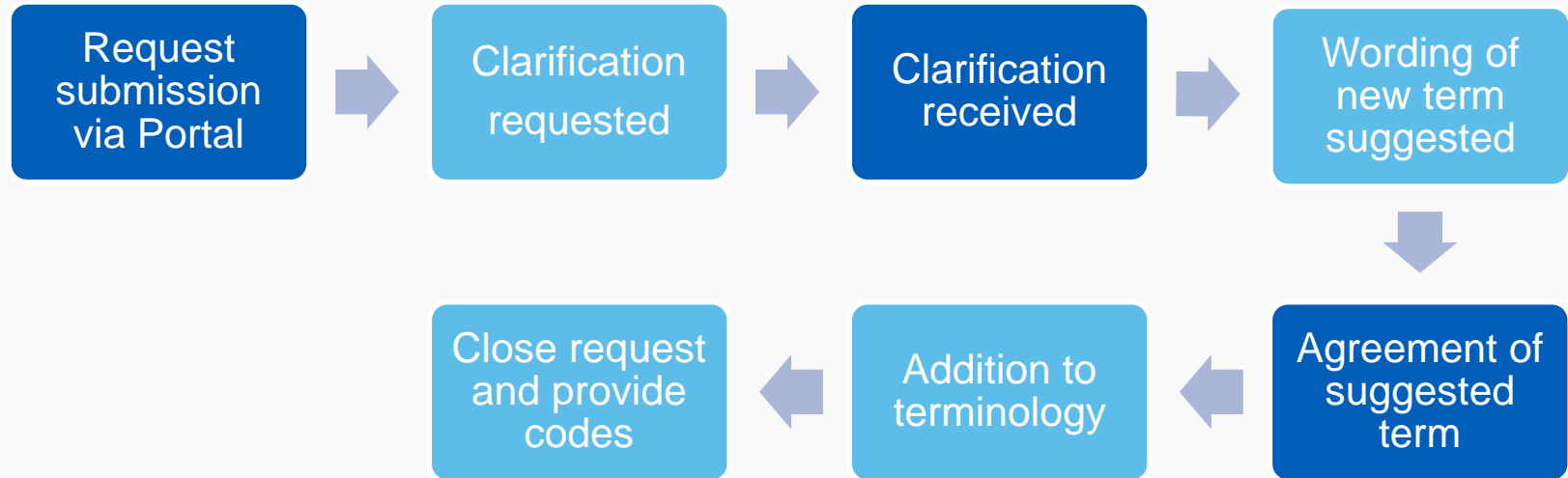
- Read code products and derivatives
 - (last release of Clinical Terms Version 3 = April 2018 release)
- Mapping products to allow migration to SNOMED CT
 - From Read V2 and CTV3 including the PBCL
 - From previous versions of SNOMED
- NICIP (National Interim Clinical Imaging Procedure Code Set)
 - NICIP code tables mapped to SNOMED CT
 - NICIP-OPCS mapping table
 - NICIP implementation guidance
 - NICIP editorial principles

Request submission

- We have a UK specific submission mechanism the [request submission portal](#)
- There is a SNOMED International submission mechanism the CRS
- Both accommodate single and bulk requests for change

- All UK originating requests for change are expected to come through UK NRC in order for them to be channelled correctly and assess impacts
- UK submit a bulk request via CRS following each UK release for any content that is assessed as being of international use
- Requests often need clarification and there is an inbuilt process
- Clarification ensures the additions meet the user needs where in scope for addition

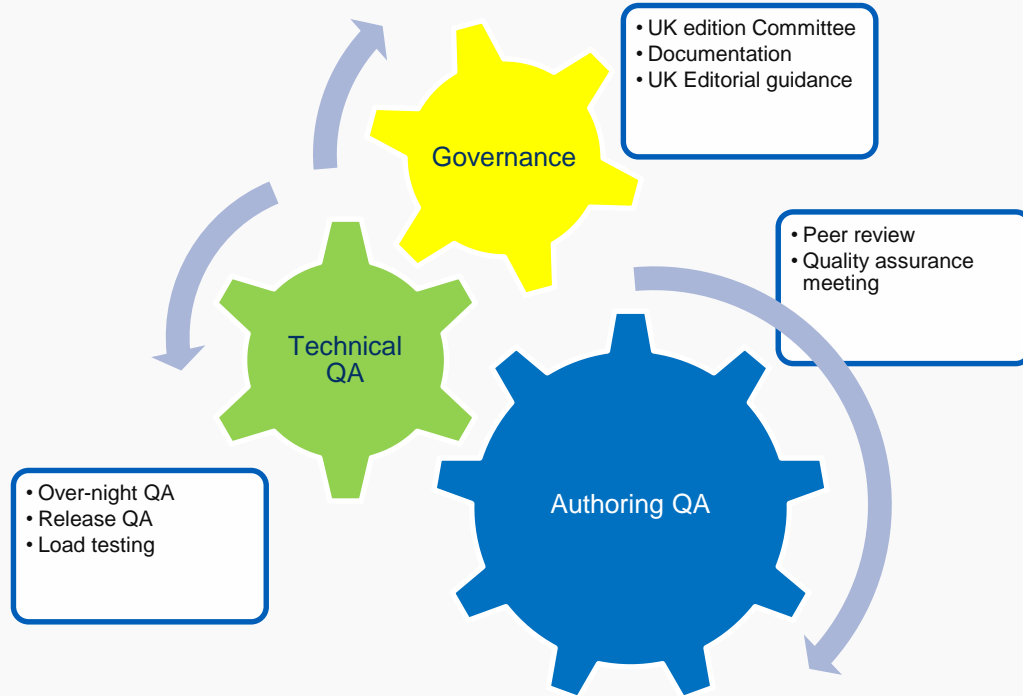
Request clarification process



Validation of authored content

- All UK authors have a clinical background / relevant experience
- Additional views are sought from a variety of expert sources
- All additions to the terminology are checked by two other authors (Peer review)
- Mature Quality Assurance system
 - 1000+ SQL rules run against the data, with supporting software
- Ultimately guidance sought from UK Edition Committee
- Queries can also be directed to the SNOMED International (Authors/Content Managers etc.)

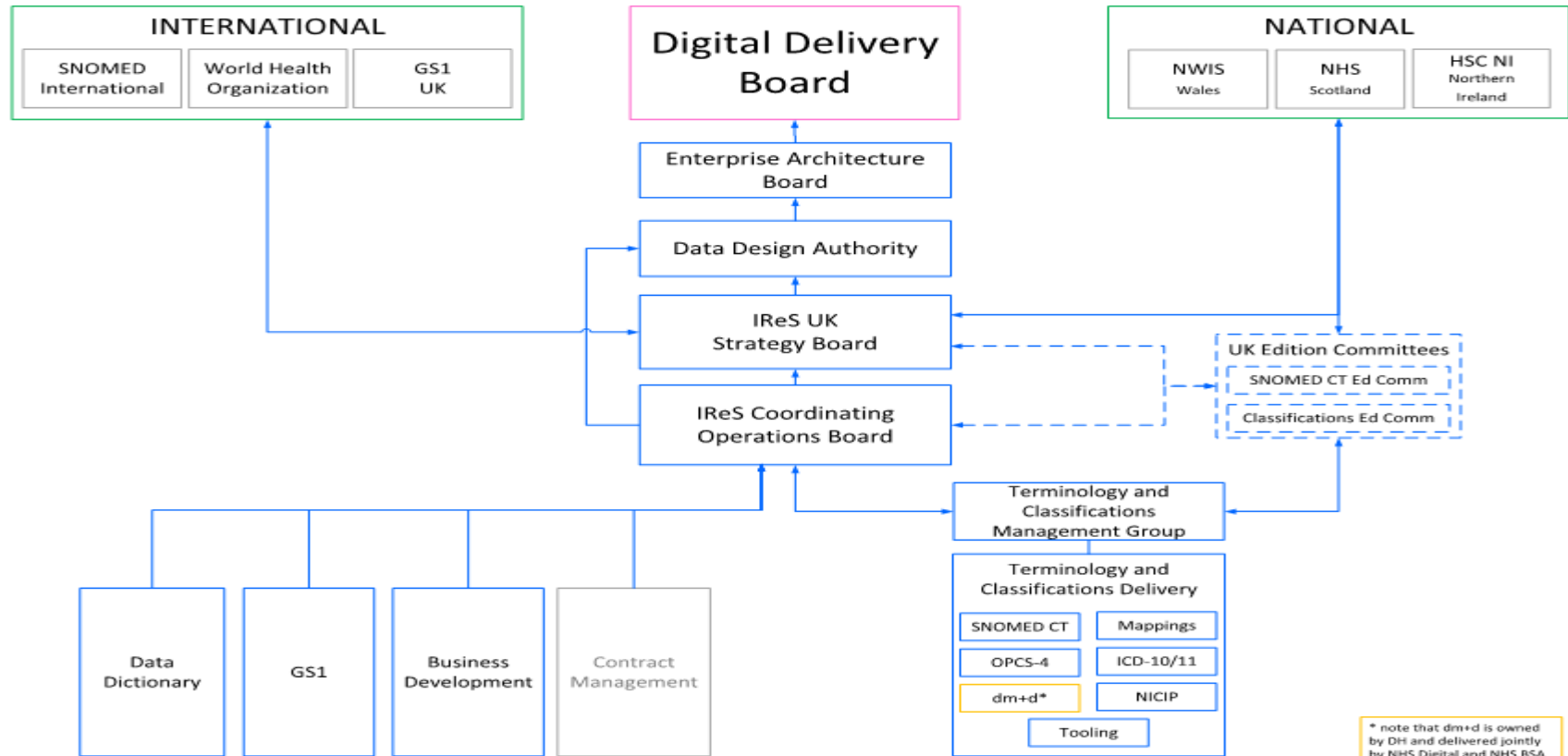
UK authoring integrated process



UKTC Edition - Editorial Principles

- Supplements (not replaces) SNOMED International Editorial policies
- Applies to UK specific content and content added initially to the UK Edition, but intended for eventual inclusion in the International Edition
- Is necessarily dynamic
- Aimed at enhancements, gaps and corrections to International guidance as well as to UK-specific items
- Needs to track when principles become accepted/approved internationally

UK NRC Governance arrangements



Why is SNOMED CT being adopted?

- To enable and support interoperability across healthcare systems
- **Improved** research
- **Improved** analytics
- Clinical decision support
- The most **comprehensive** and **precise** clinical health terminology in the world
- Support the national information strategy
- Meet the demands of today's healthcare needs

SNOMED CT adoption challenges and approach

- **Secondary Care Payments**

- Driven by use of aggregated classifications not terminology
- Financial focus is on secondary use reporting not clinical data entry

Cross maps / Education / Support Adoption

- **Historical systems**

- Mapping from previous terminologies
- Configuration of new EHR with alerts/flags

Education / Subset Development / Mapping Support / Configuration Support

- **Subset Development – National vs Local**

Education / Subset Development / Professional Engagement

- **Time – Adoption not achieved over night**

Education / Engagement / Support Adoption

SNOMED CT migration and challenges

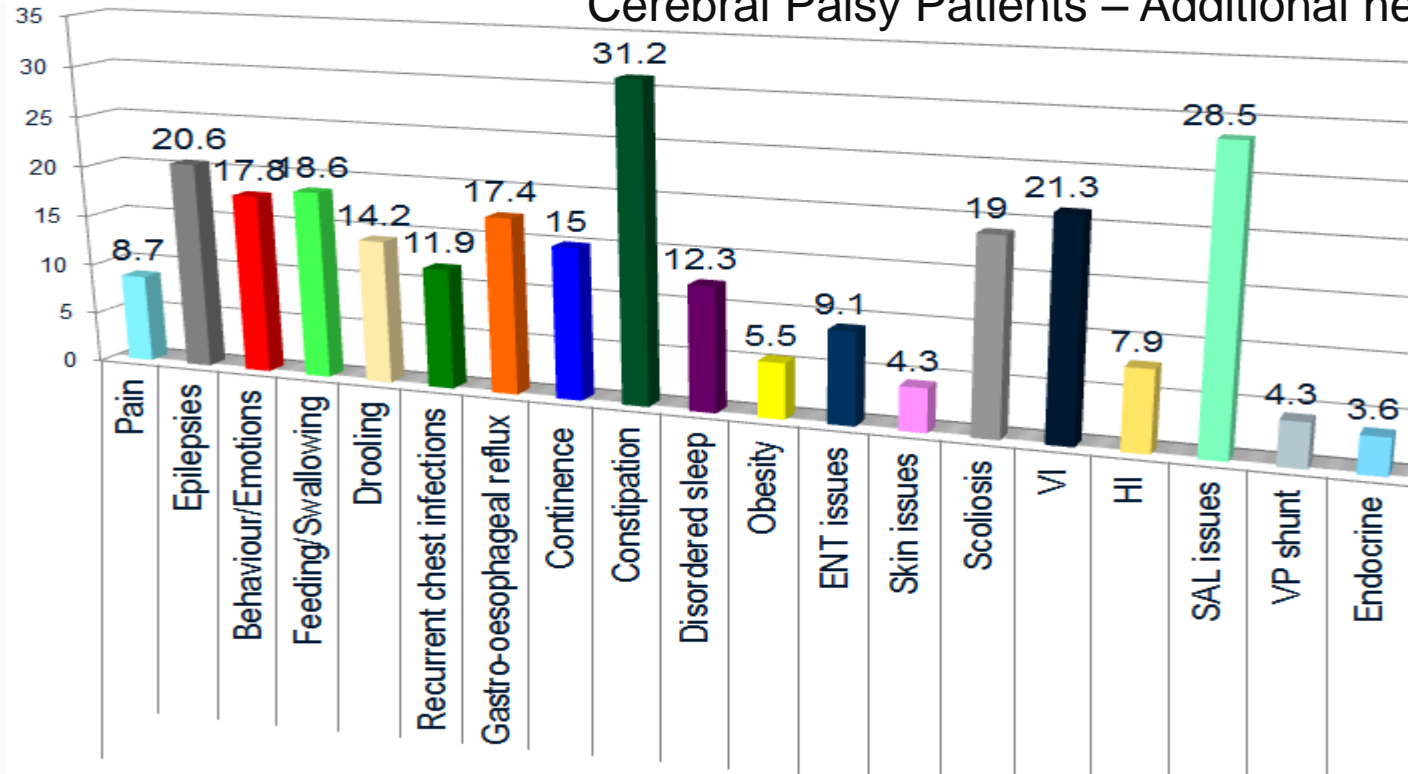
- Migration from previous terminologies
 - Pathology Bounded Code List for lab results – mapped to SNOMED CT observables (UK Edition) to enable primary care migration
 - Histopathology domain moving to SNOMED CT from antecedent versions
 - Mapping products from Read to SNOMED CT & supporting look up tables
- SNOMED CT needs to be fit for purpose including for diagnostics mental health, dentistry, emergency care, transfers of care (e.g. emergency to primary care)
- Impoverished SNOMED CT observables and clinical content where this is affected by the LOINC agreement (e.g. chemical pathology, microbiology) & not just pathology (e.g. vital signs)
- **However now permitted** to join with other NRCs and address content (For SNOMED CT) where required

SNOMED CT adoption requirements

- Support for **care provider organisations** in their adoption
 - Requirements for system procurements
 - Providing guidance on local configuration options and support tools
 - Assisting analysis of SNOMED coded data
 - Supportive tooling and information analysis
 - Provide consultancy for first of type/best of breed systems
- Support **system suppliers** in their adoption of SNOMED CT
 - Provide design guidance and clear specifications for common use cases
 - Identify problem areas of adoption and devising scalable solutions
 - Assist with migration issues from legacy or bespoke coding systems

Case studies: SNOMED CT analytic example

Cerebral Palsy Patients – Additional health issues



SNOMED CT adoption

- **Guidance for developers of national interoperability standards**
on the optimal use of SNOMED CT
 - Contribute to EHR standards design decisions
 - Guidance on use in archetypes and information models
 - Guidance on SNOMED CT use for Professional Standards Bodies and Royal Colleges
- Guidance for developers of statutory national reporting
on the optimal use of SNOMED CT
 - what fields to code with SNOMED CT
 - use of mapping tables to national classifications,
particularly in outpatients departments

SNOMED CT adoption

- Provide support for specifications for the development of new outcome-based commissioning and payment mechanisms in care
 - Feeding into design phase to make maximum use of existing patient level data on for interventions and outcomes.
- Provide **comprehensive range of education and training resources** for all communities of interest in [one place](#)

SNOMED CT Education and Training

[SNOMED CT - Brochure](#) - Provides a high level overview of SNOMED CT

[SNOMED CT - Implementation for Primary Care](#) - education and training

[SNOMED CT - Webinars](#) - Regular interactive webinars delivered by NHS Digital allow participants the ability to share, receive and discuss information in real-time

[SNOMED CT - eLearning](#) - Aimed at anyone who will be using applications incorporating SNOMED CT and is designed to provide them with a good basic understanding

[SNOMED CT - Animation](#) - A simple animation to illustrate how SNOMED CT can be used in the transmission of an electronic discharge message

[SNOMED CT - Recorded Presentations](#) - Recorded presentations are aimed at anyone who would like a good basic understanding of SNOMED CT

[SNOMED CT - Examples of use](#) - Publications and case studies illustrate and discuss the use of SNOMED CT in clinical practice

[SNOMED CT - Technical Manuals and Guidance](#) - Technical Manuals, guidance and reports provide more detailed information

[SNOMED CT - Implementation Forum](#) - Focussed on implementation topics where ideas can be shared and questions raised

[SNOMED CT - NHS Digital Browser](#) - Provides ways to browse and search the SNOMED CT UK Edition. It contains the SNOMED CT International release, the UK Clinical Extensions and the UK Drug Extension.

[SNOMED CT - Read CTV3 to SNOMED CT Mapping Lookup](#) database

[SNOMED CT - Read V2 to SNOMED CT Mapping Lookup](#) database

[SNOMED CT - International Education](#) - SNOMED International provide online courses, tutorials and other materials that are designed to enable you to learn more about SNOMED CT

[SNOMED CT - Scientific and Academic Papers](#) - Examples of the benefit of SNOMED CT usage