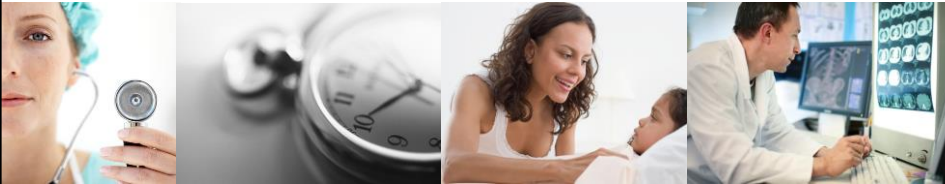


Leading healthcare terminology, worldwide


# SNOMED CT Implementation Overview and Approaches

## Expo 2016 Tutorial



Delivering **SNOMED CT**  
The global language of healthcare

David Markwell, Head of Education  
Jon Zammit, Implementation Specialist



Delivering **SNOMED CT**

## Overview

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### Part 1

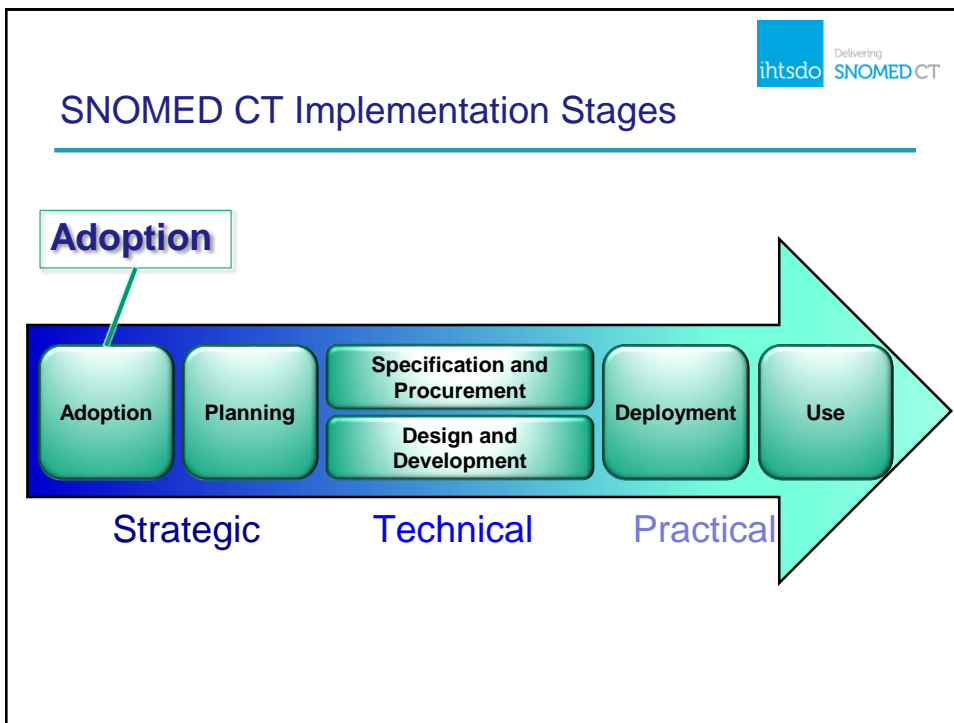
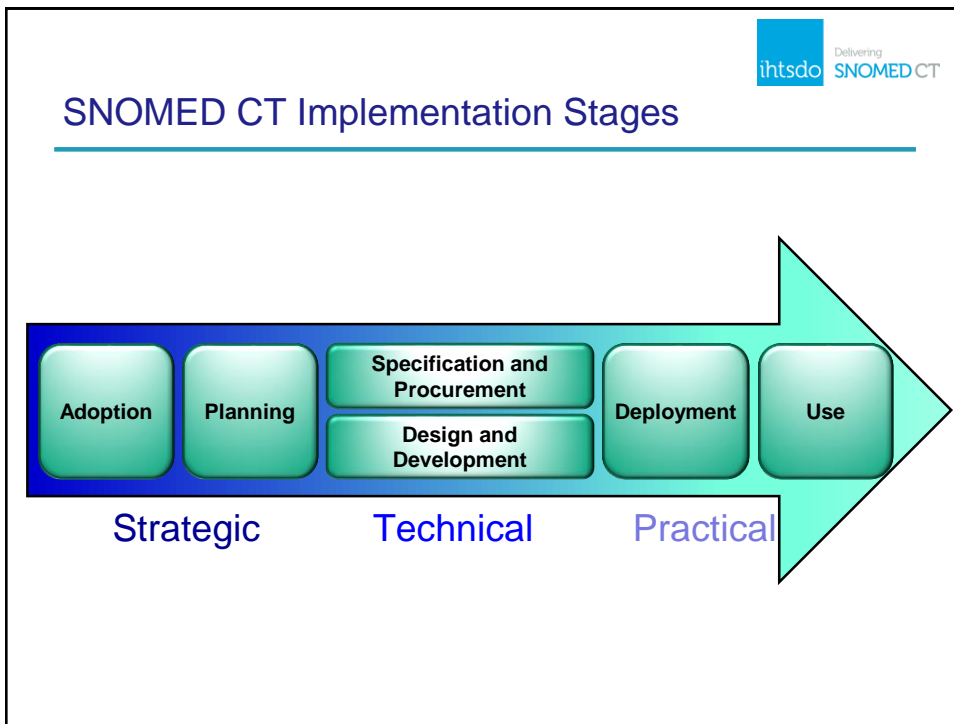
- Adoption and Planning
- Development or Procurement
- Specification and Procurement
- Approaches to Implementation
- Procurement

### Part 2

- Design and Development
- Implementation Guidance
  - Example: Search and Data Entry
- Deployment & Use

### Questions



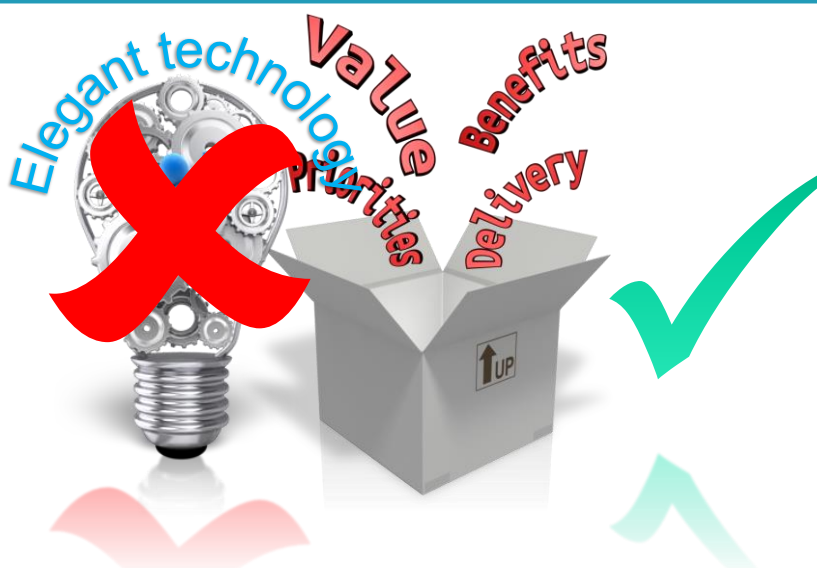



## Adoption Occurs at Many Levels

- National adoption
- Organizational adoption
- Adoption in standards
- Vendor adoption
- Project adoption



## Adoption Depends on Delivering Value




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**SNOMED CT**


## Benefits of SNOMED CT Implementations

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A solid foundation for clinical records




Interoperable information and knowledge resources




Improved access to guidelines and decision support



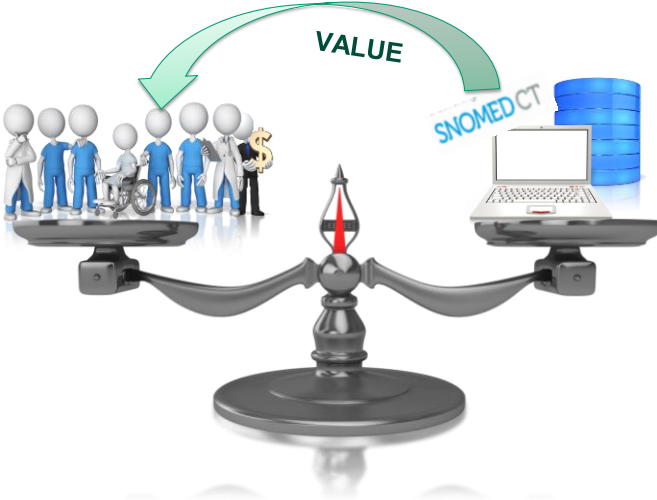
Improved Clinical and Business Intelligence



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## Approach to Successful SNOMED CT adoption

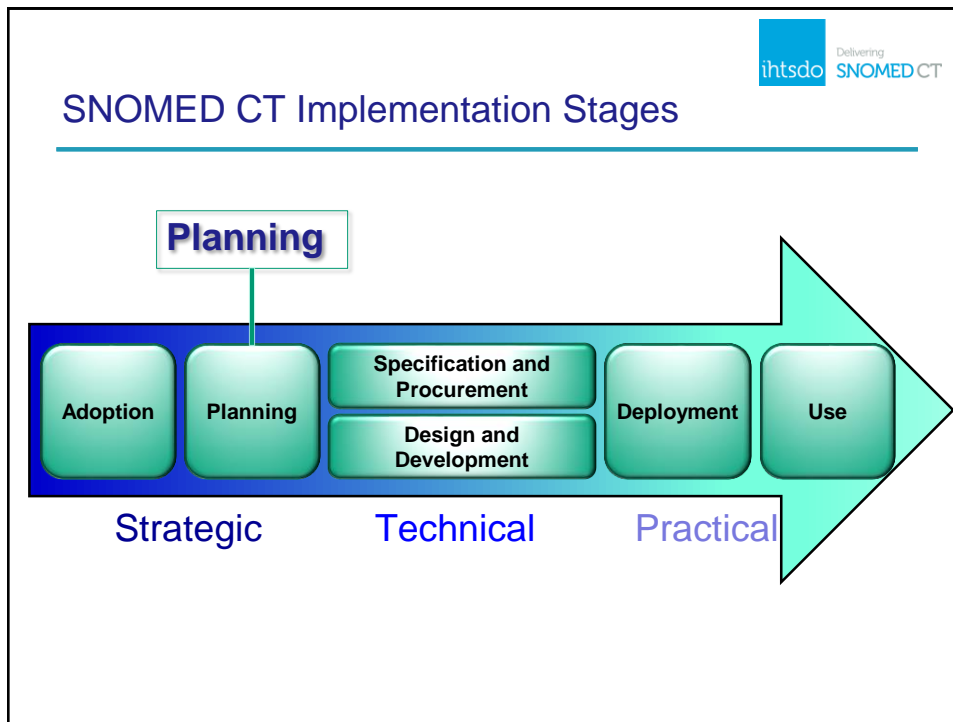
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**Approach to Successful SNOMED CT adoption**

**Building the Business Case for SNOMED CT**

- Published in 2014
- Sets out the business case for SNOMED CT
  - Costs of adoption
  - Implementation stages
  - Qualitative and quantitative benefits of each stage
- Available for download from the IHTSDO website
  - [www.ihtsdo.org](http://www.ihtsdo.org)
  - Direct link
    - <http://snomed.org/businesscase>



**Planning**

- Planning how SNOMED CT will be used
- Identifying
  - Existing systems to be modified
  - New systems required
- Determining whether to
  - Design and develop
  - Specify and procure
- Awareness of dependencies
- Setting realistic timescales

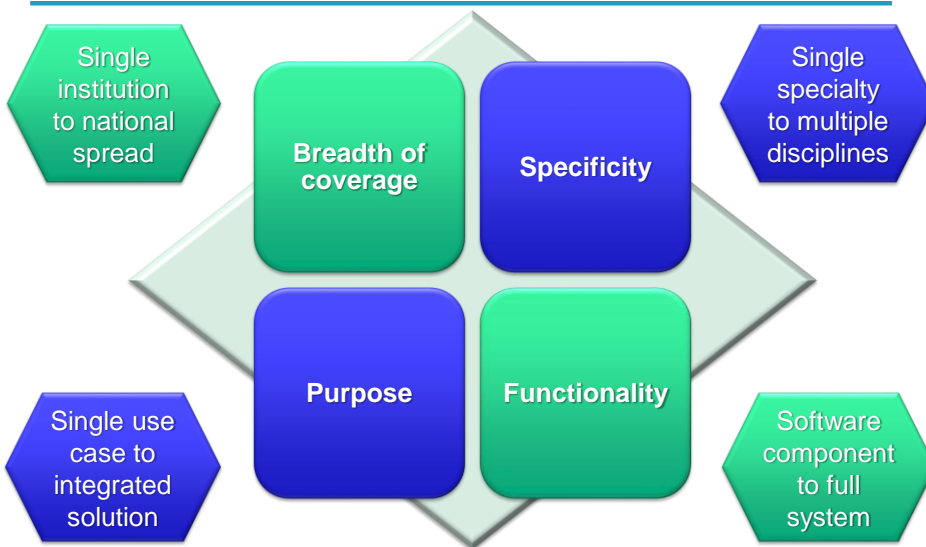
The slide features a 3D blue figure standing next to a whiteboard. The whiteboard displays a central circle labeled 'Implement SNOMED CT' with arrows pointing to 'Analytics', 'Clinicians', 'Developers', and 'Procurement'. A 'Vendor' label is also present with an arrow pointing towards the center. The ihtsdo logo and 'Delivering SNOMED CT' text are in the top right corner.

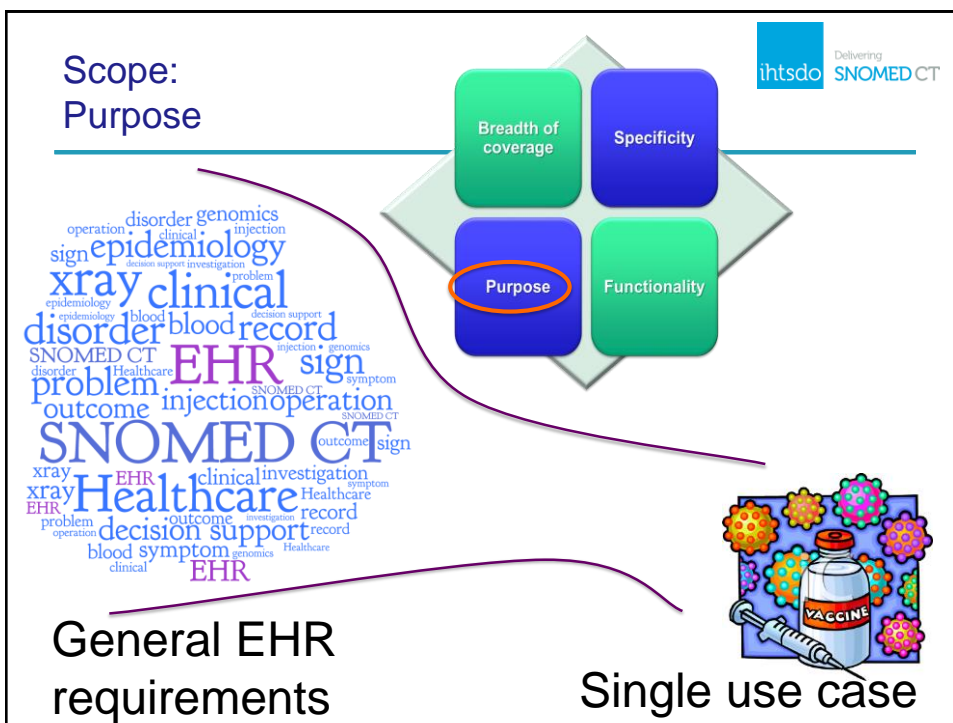
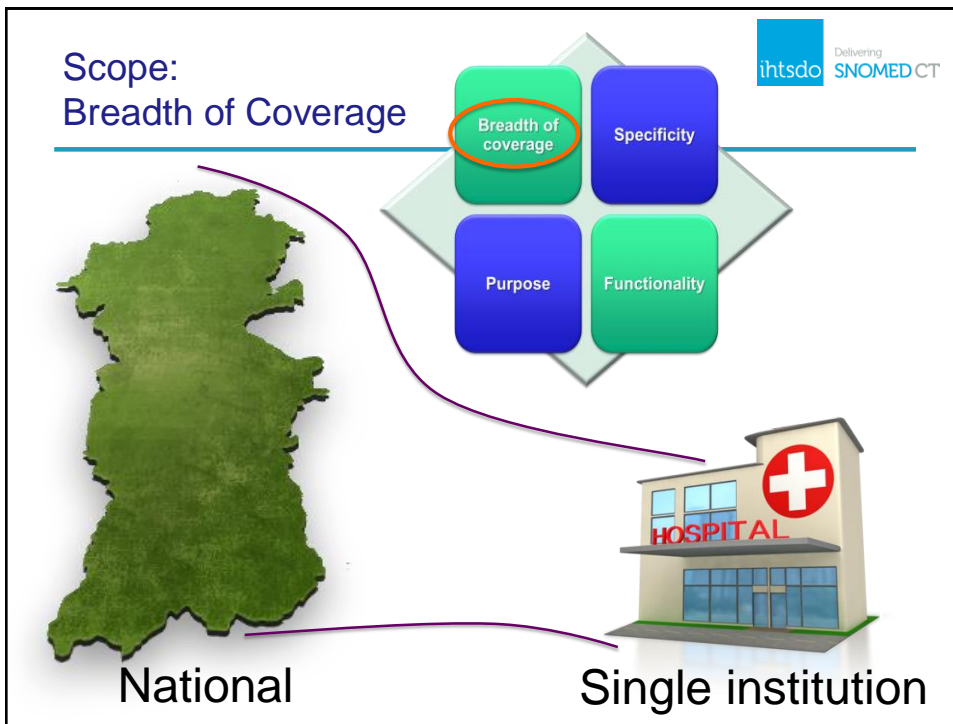
## Understand Where Are You Starting From?

- A new system – a fresh start on a ‘greenfield site’
  - Addressing new requirements with SNOMED CT
  - Using SNOMED CT as part of a new development
- Replacing a relic of earlier development
  - Replacing a system without losing functionality or information
  - Including SNOMED CT as part of the new solution
- An evolving system
  - Updates to a system that includes use of SNOMED CT
  - Step by step progress to add SNOMED CT enabled functionality

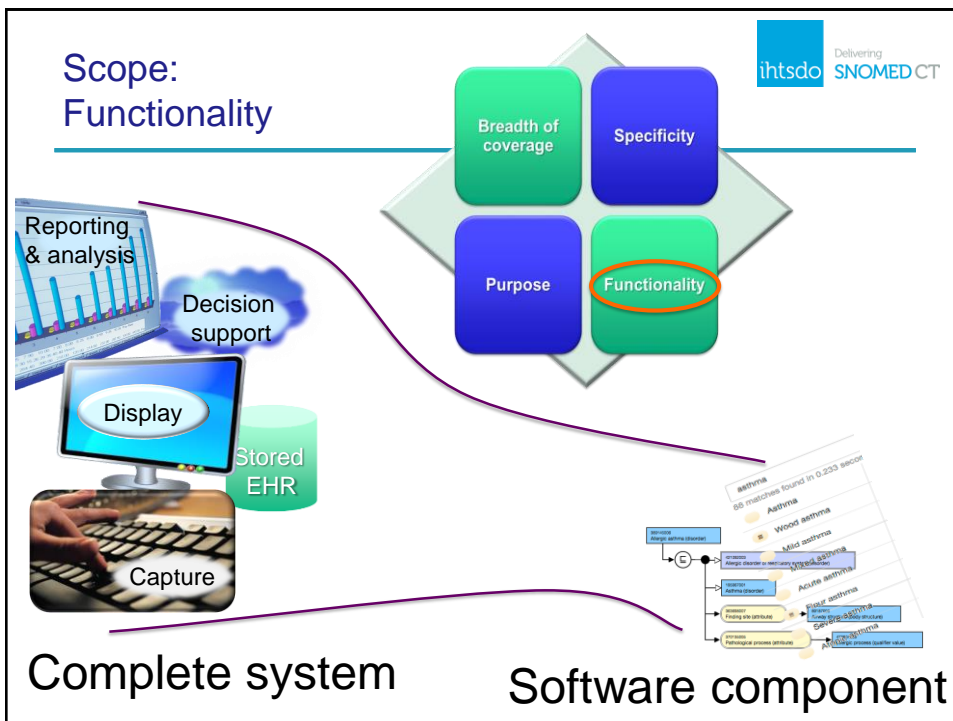
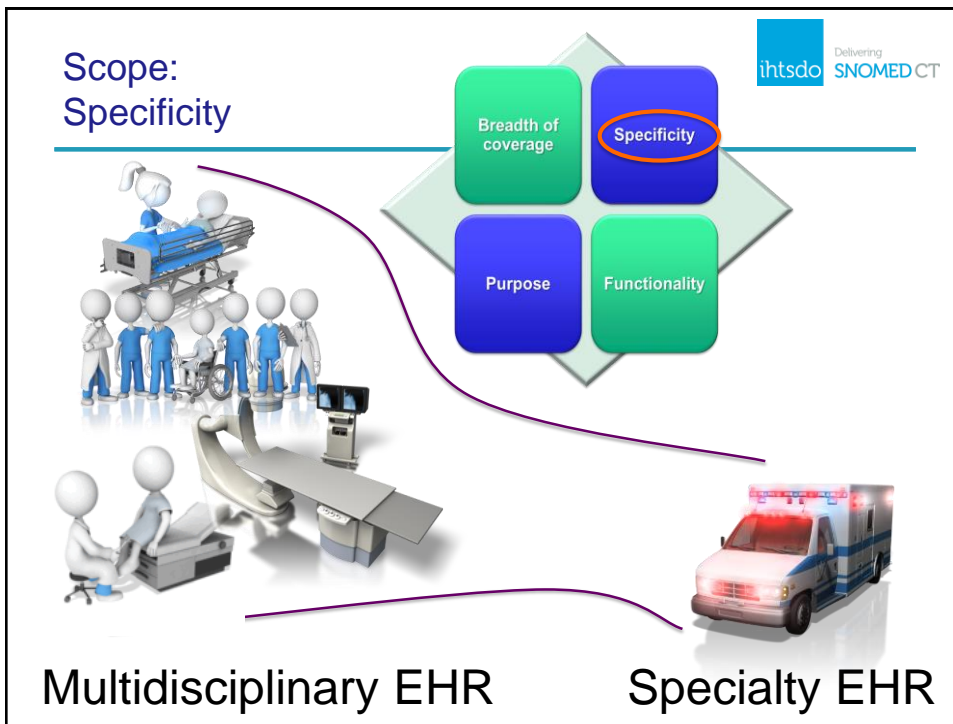


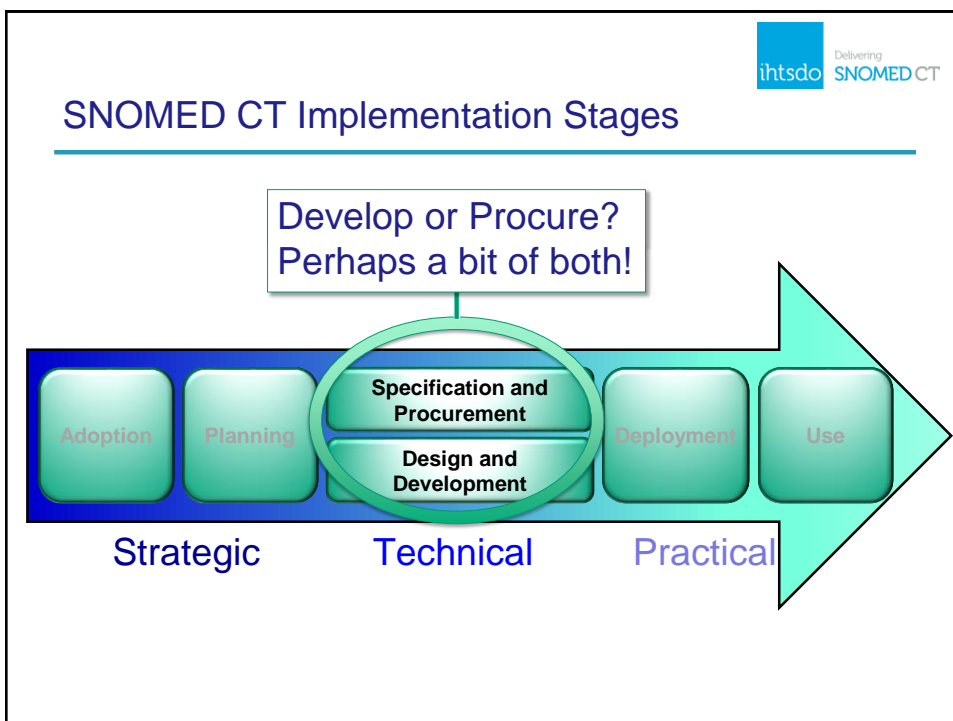
## Understand the Scope of Intended Implementation

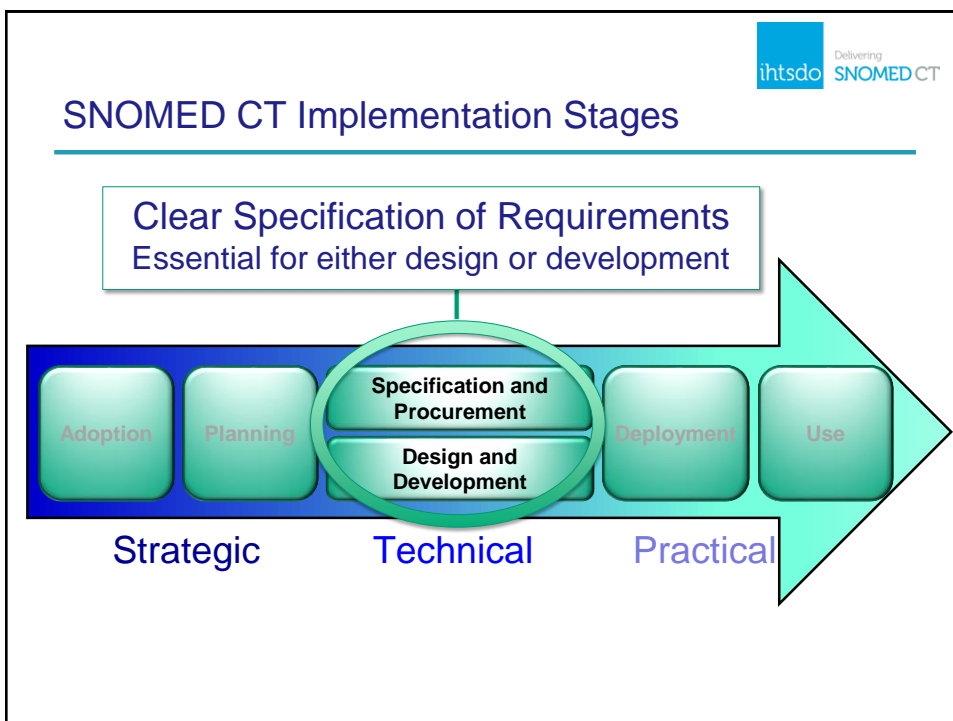
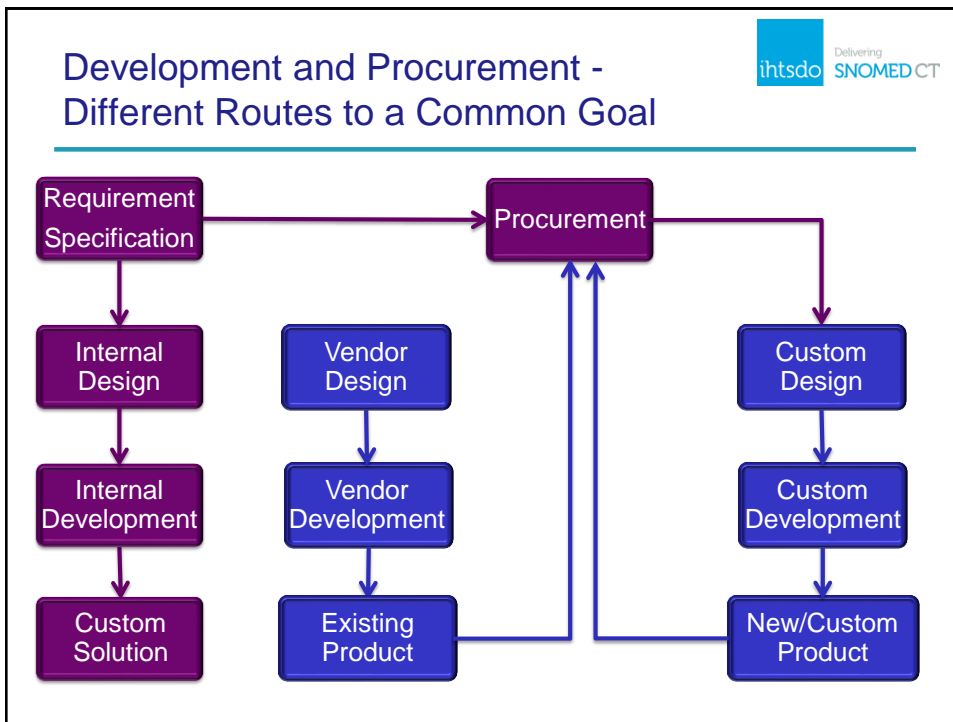












## Pitfalls When Specifying Requirements

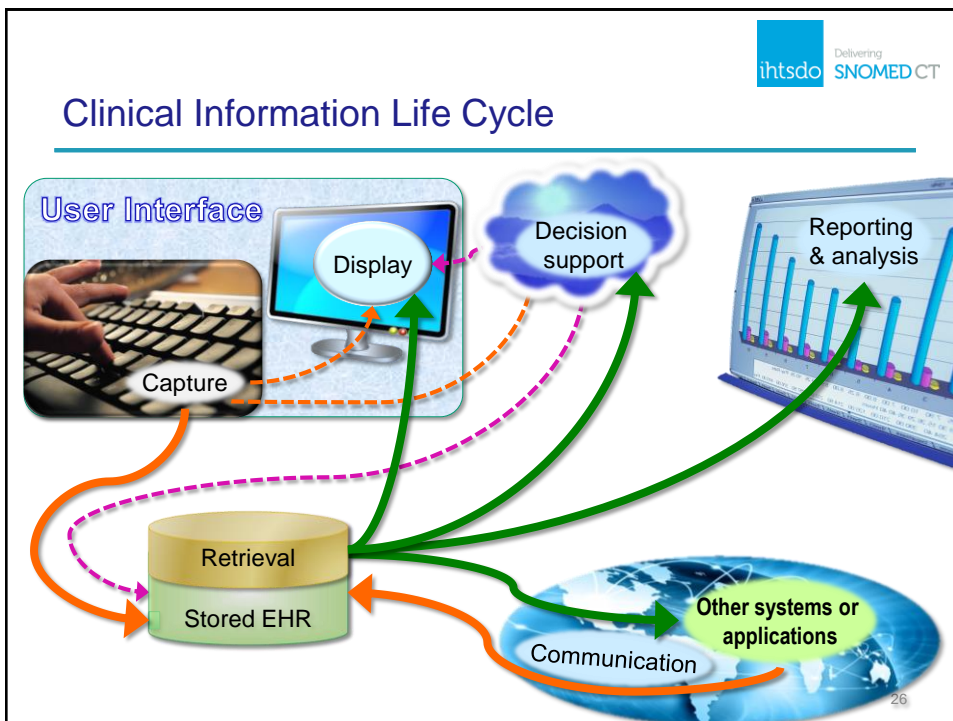
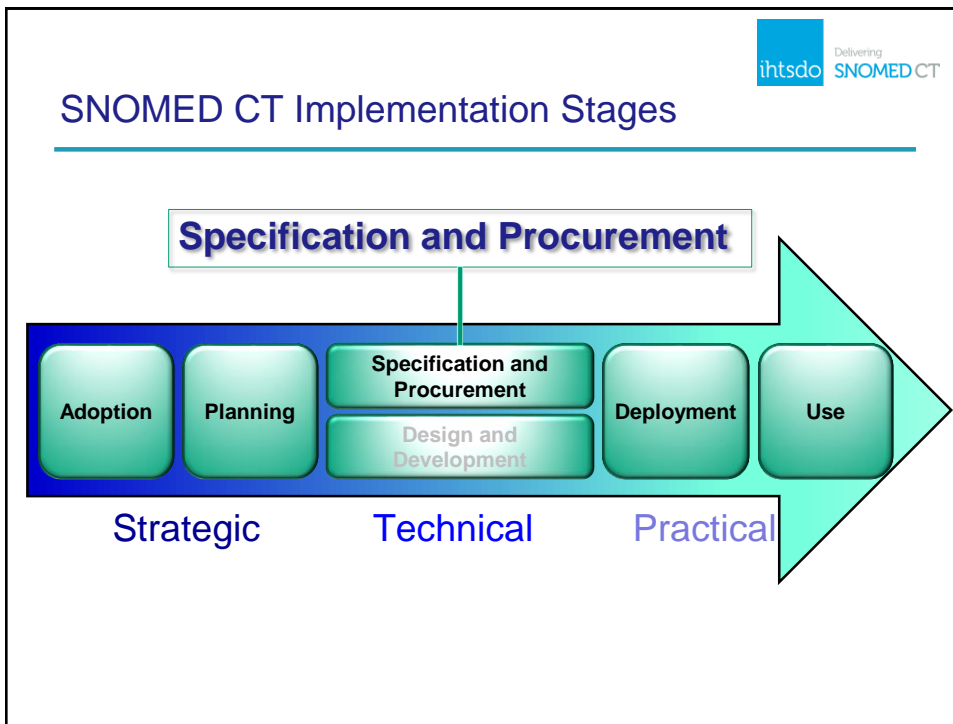
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- It is not enough to say 'Implement SNOMED CT'
  - Some of those responding to a procurement may interpret SNOMED CT implementation in a limited way
- SNOMED CT implementation is not all or nothing
  - There are different approaches to SNOMED CT implementation
- Benefits depend the approach
  - Choose an approach that meets your immediate requirements  
*... but consider the impact on next steps ...*
  - A short-term solution may delay enhancements that meet future requirements and deliver additional benefits

## Identifying Requirements

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- Clearly document
  - Objectives – what benefits should be delivered
  - Outcomes – what measurable changes are to be achieved
  - Practical use – how current working practices will be supported
- SNOMED CT specific requirements
  - May vary depending on overall objectives
  - Should not be specified in isolation but should be considered in the context of the overall solution
  - May impact all stages of the clinical information life cycle



## Specifications Should Cover All Stages in the Clinical Information Life Cycle

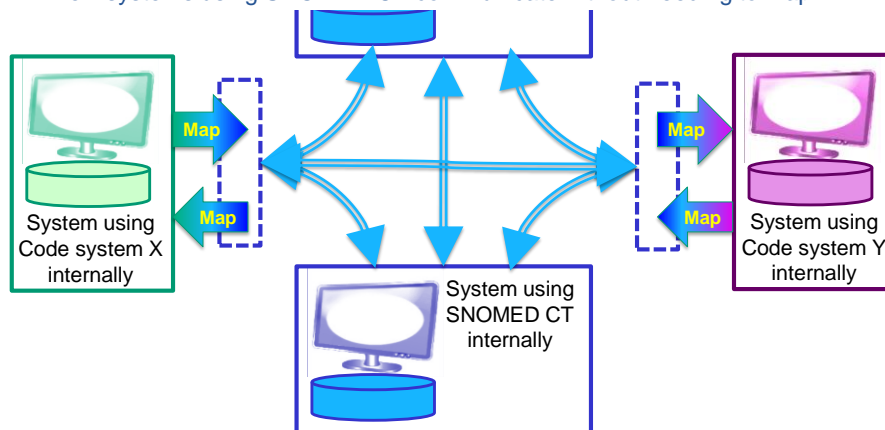


- Data capture
  - Easy to use as part of clinical working practice of all intended users
- Storage
  - Structured and/or indexed to enable effective retrieval
- Display
  - Information relevant to different intended users readily accessible and displayed in ways relevant that support their work
- Communication
  - Meeting needs for sharing or transfer of required information in standard or agreed forms
- Reporting and analysis
  - Effective retrieval to meet requirements of clinical users and other stakeholders (e.g. epidemiologists, management, researchers)
- Make sure the selected solution meets your requirements
  - Include acceptance tests for all stages
  - All aspects of your requirements should be tested

## Approaches to Using SNOMED CT Common Terminology for Communication



- Existing systems using different code systems internally
- Map to and from SNOMED CT as a common terminology for communication
- New systems using SNOMED CT communicate without needing to map



### Approaches to Using SNOMED CT Indexing for Analytics

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- EHR system using local codes, classification and text to represent records
- Algorithmic rules map and index data with SNOMED CT codes or expressions
  - For local analysis using SNOMED CT semantics
  - For export to data warehouse for larger scale aggregation and analysis


The diagram illustrates the process of indexing EHR data for analytics. On the left, an EHR system (represented by a monitor and a database icon) uses local codes, classifications, and text internally. A blue arrow labeled 'Indexing algorithm' points to a central database icon. Below this arrow, text reads 'Local analysis using SNOMED CT features for meaning-based retrieval'. A blue arrow then points from this central database to a larger database icon representing a data warehouse. To the right of the data warehouse, text reads 'Data warehouse analysis using SNOMED CT features for meaning-based retrieval'. Below the data warehouse, two smaller database icons are connected to it by blue lines, suggesting a distributed or multi-tier architecture.

### Approaches to Using SNOMED CT Use of SNOMED CT for Internal Storage

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- Data capture (and display) use a local or proprietary user interface terminology
- Interface terminology is mapped or linked to SNOMED CT
- EHR system uses SNOMED CT for storage, indexing and communication
- Reporting and analytics use SNOMED CT features including meaning-based retrieval

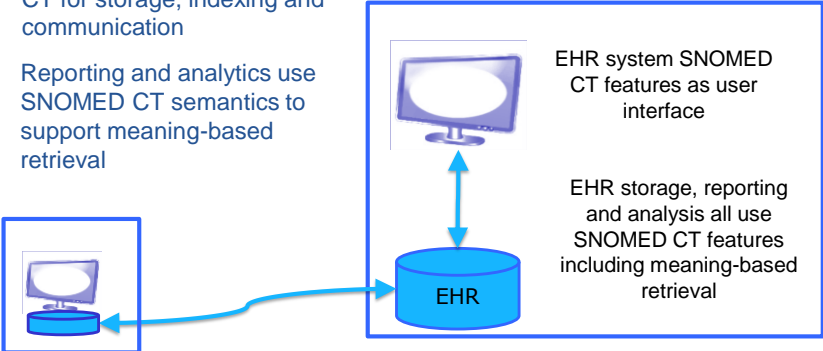
The diagram illustrates the use of SNOMED CT for internal storage. On the left, a monitor and database icon represent the EHR system. A blue arrow labeled 'Interface map to SNOMED CT' points from the EHR system to a central database icon labeled 'EHR'. To the right of the EHR database, text reads 'EHR storage, reporting and analysis all use SNOMED CT features including meaning-based retrieval'. Above the EHR database, a dashed green box contains a monitor and database icon with the text 'EHR system uses local or proprietary interface terminology'. A blue arrow points from this box down to the EHR database, indicating the mapping of local terminology to SNOMED CT.

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## Approaches to Using SNOMED CT


### Full Use of SNOMED CT

- Data capture (and display) uses SNOMED CT interface features including
  - Synonyms and language reference sets
  - Subsets and ordered lists represented as SNOMED CT simple or ordered reference sets
  - Searches using subtype filtering to limit list
- EHR system uses SNOMED CT for storage, indexing and communication
- Reporting and analytics use SNOMED CT semantics to support meaning-based retrieval




EHR system SNOMED CT features as user interface


EHR storage, reporting and analysis all use SNOMED CT features including meaning-based retrieval

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## Multistep Approaches and Tailor-made Solutions




- Stepwise approaches may allow your requirements to be met in stages
  - Ensure each stage delivers benefits to motivate use
  - Lack of short-term benefits may reduce enthusiasm for future steps
- A tailor made solution may meet all your stated requirements
  - But your requirements for SNOMED CT may evolve
  - Can the solution be adapted to meet emerging requirements or will you need to start again?



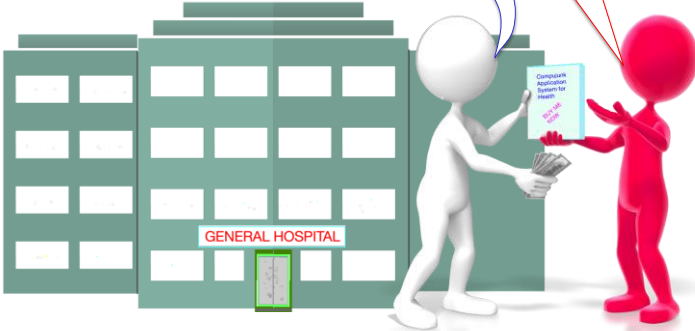




## Warnings and Hopeful Signs in a Procurement




## Warning Signs During Procurement



Does your system support SNOMED CT?

Our system can use any codes you choose. If you want SNOMED CT we will just add it to our code tables



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## Warning Signs During Procurement

How do users record data using SNOMED CT?

SNOMED CT is just a long list of terms you can choose from

GENERAL HOSPITAL

Complex Application System for Health

Detailed description: This slide features a white 3D figure on the left and a red 3D figure on the right. The white figure is holding a stack of money and has a speech bubble asking, "How do users record data using SNOMED CT?". The red figure is holding a blue folder labeled "Complex Application System for Health" and has a speech bubble answering, "SNOMED CT is just a long list of terms you can choose from". In the background is a green building with a sign that says "GENERAL HOSPITAL". The top right corner has the "ihtsdo Delivering SNOMED CT" logo.

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## Warning Signs During Procurement


Can I retrieve data using SNOMED CT?

Yes you can specify the codes you want to retrieve in any code system

GENERAL HOSPITAL

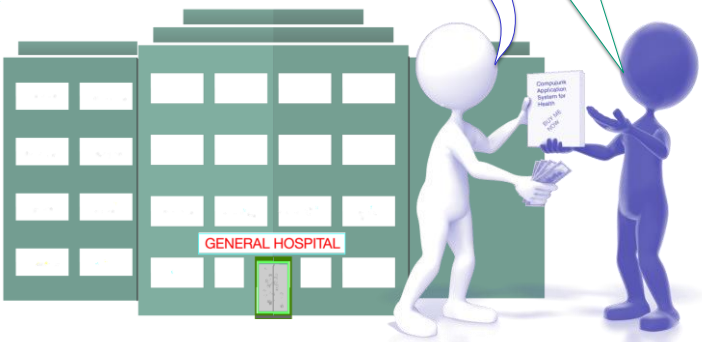
Complex Application System for Health

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## Positive Signs During Procurement


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Does your system support SNOMED CT?

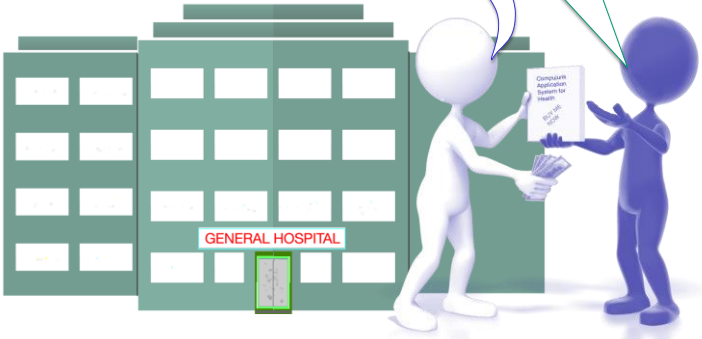
Yes we support SNOMED CT and we can put you in touch with a people who are using our system with SNOMED CT

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## Positive Signs During Procurement


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What features of SNOMED CT does your system support?

Our proposal details the SNOMED CT features the system supports for data entry, retrieval, etc. It also notes features we don't support and future planned enhancements ...

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## Overview - Part 2

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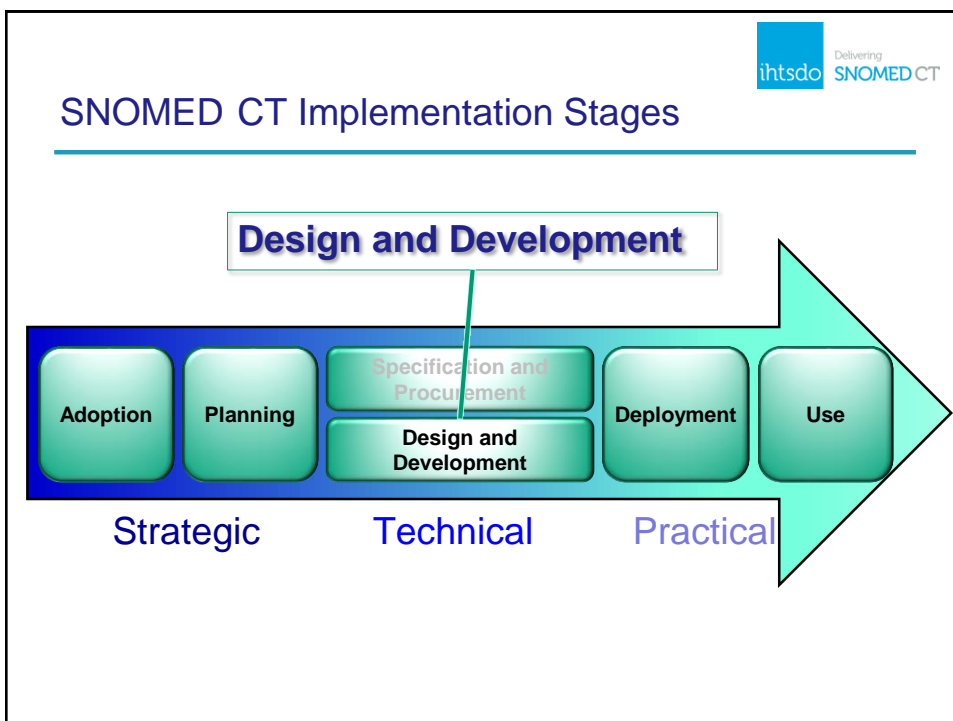

**Part 1**

- Adoption and Planning
- Development or Procurement
- Specification and Procurement
- Approaches to Implementation
- Procurement

**Part 2**

- Design and Development
- Implementation Guidance
  - Example: Search and Data Entry
- Deployment
- Use of SNOMED CT

**Questions**

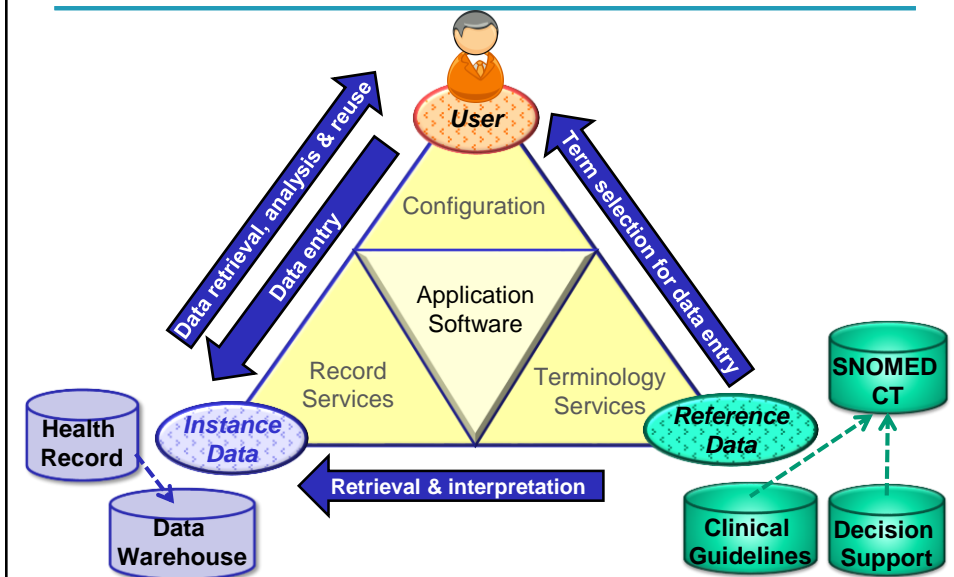


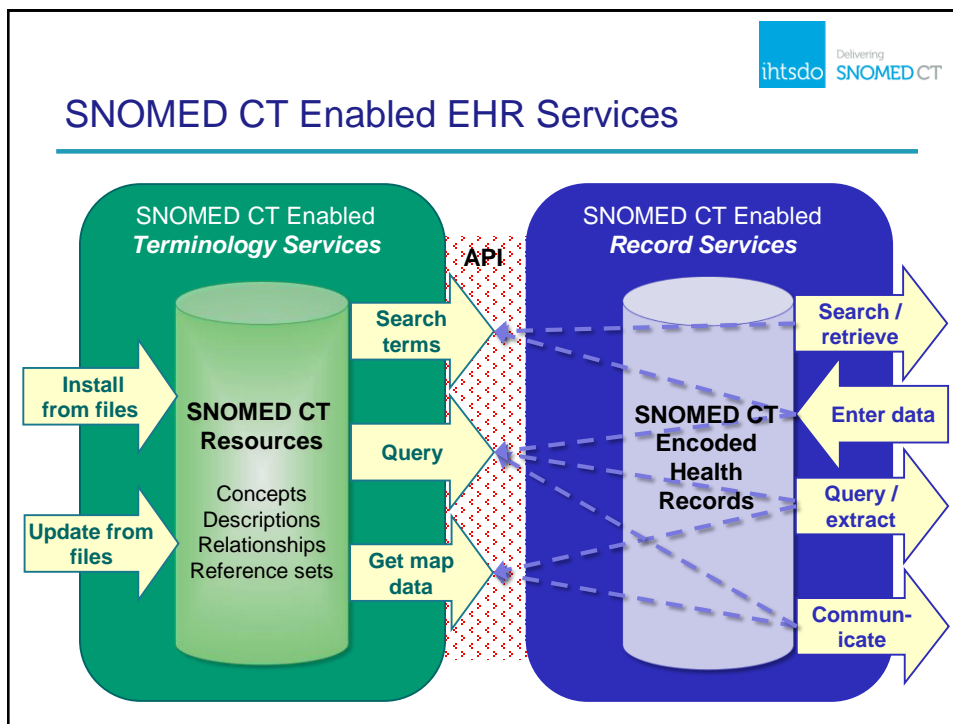
## Team Contributions to Specification and Design

- Clinical input to user interface design and motivation
  - Compatible with clinical practice
  - Identify benefits that will encourage use
- System architects and software designers
  - Robust system design delivering necessary performance
  - Support for SNOMED CT logical design
- Guidelines and decision support developers
  - Support use of SNOMED CT for knowledge linkage
- Management
  - Alignment with key reporting and audit requirements
- Epidemiology and Clinical Research
  - Identify key features for epidemiology and clinical research

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## Users, Software, Services and SNOMED CT





- 
- ### SNOMED CT Enabled Services
- Software services that support effective use of SNOMED CT as part of health record systems
- **Record services**
    - Services that directly manage patient health records
    - Data entry, display, retrieval, communication and record sharing
  - **Terminology services**
    - Services manage and provides access to terminology resources
    - Installing, searching, navigating and using the terminology
  - **Knowledge resource services**
    - Clinical guidelines
    - Decision support
  - **Analytics services**
    - Data warehousing
    - Reporting and auditing

## Design and Development: Recommendations for SNOMED CT Implementers



- Make use of SNOMED CT features including ...
  - Synonyms and language preferences
  - Enhanced meaning-based retrieval
  - Reference sets to customize for different uses
  - Constrained searches appropriate to a particular context
  - Extensions that meet national and local requirements
- Make use of the guidance we offer
  - Refer to the Technical Implementation Guide (TIG)
- Avoid common pitfalls
  - Thinking of SNOMED CT as just a code system replacement
  - Simplistic searches that return long unstructured lists of matches
  - Failing to update to the latest SNOMED CT release



## Implementation Guidance Example

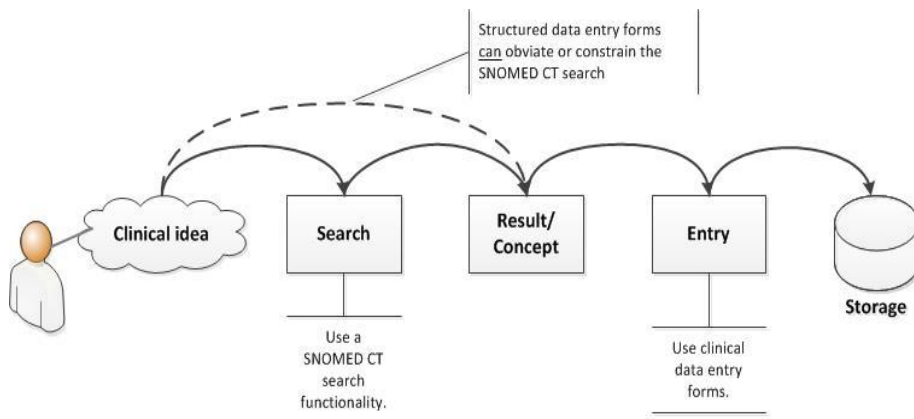
Search and Data Entry



## Search and Data Entry

- **Search**
  - Process by which a user finds a concept to represent a clinical idea
  - Needs to be quick and easy for users
  - SNOMED CT can make this easier
- **Data Entry**
  - Process by which a user submits information containing relevant SNOMED CT concept identifiers for storage in an EHR
  - Approach depends on the setting

## Relationship Between Search and Data Entry





## Use Cases for Searching SNOMED CT

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- Select a clinical meaning for data entry at point of care
- Design a data entry template
- Create a query or report
- Bind SNOMED CT to information models
- Bind SNOMED CT to knowledge artifacts
- Develop a reference set
- Evaluate terminology content
- Author SNOMED CT content (extensions or translations)
- Develop maps from SNOMED CT to other code systems

## Approaches to Searching

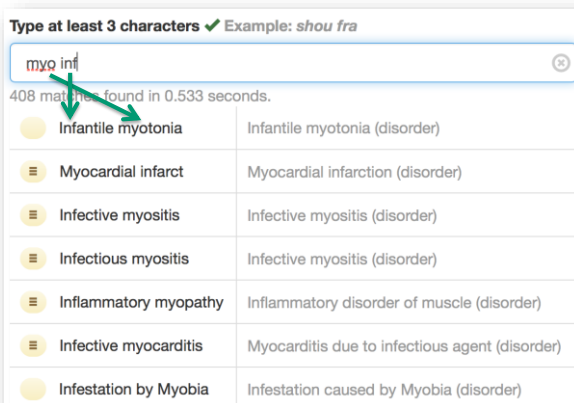
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- Search by Terms
- Search by Identifiers
- Constrain Searches
- Extend Searches
- Improve Search Speed
- Optimize Display of Search Results

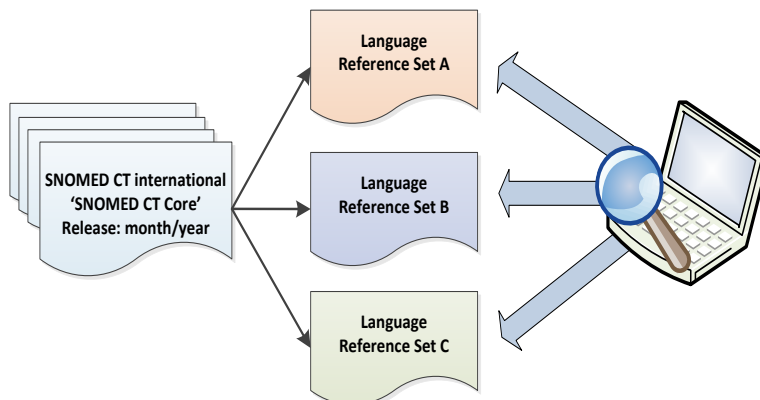


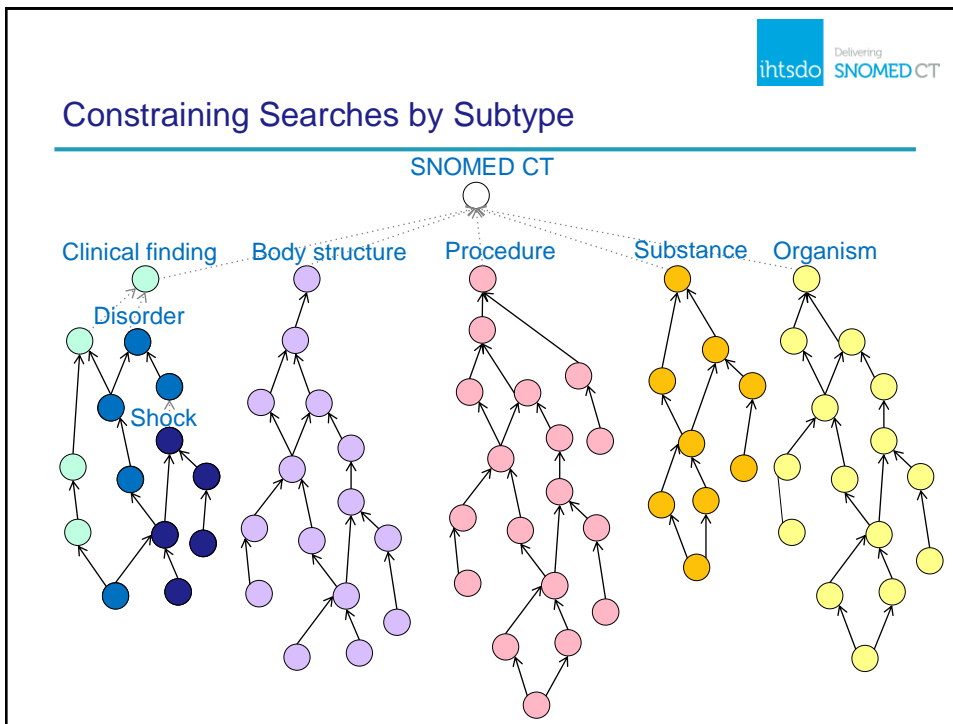
## Search by Terms

- User configurable search strings:
  - Words or parts of words in any order – *usually the best option*
  - Precise matching word or phrase
  - Contains a string or pattern



## Constraining Searches by Language or Dialect





### Constraining Searches by Subtype – Example

**Unconstrained:**

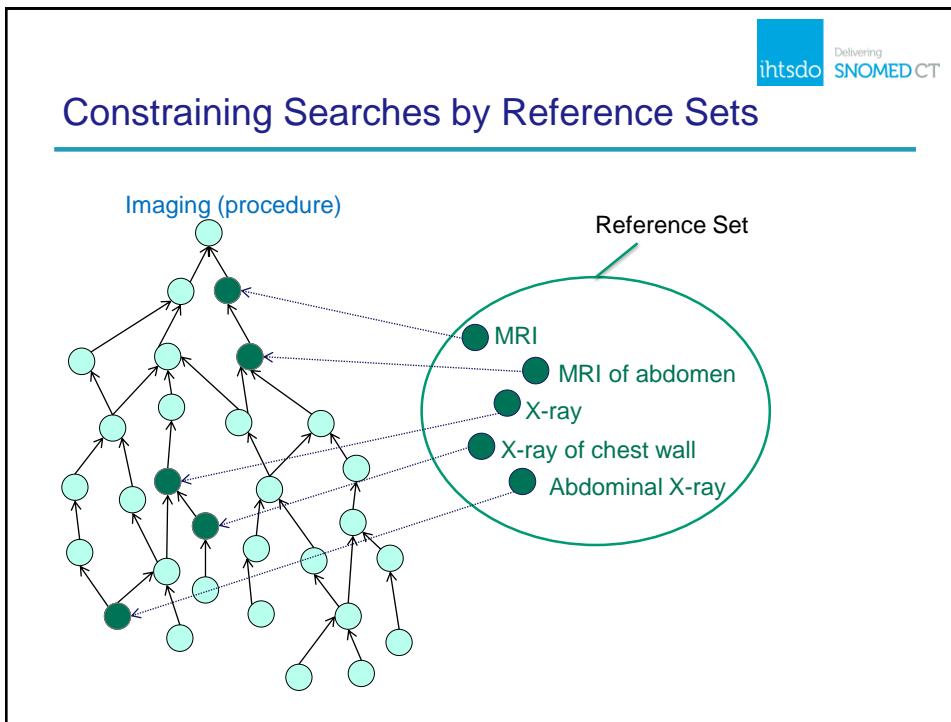
“renal calculus” 37 results

Only subtypes of disease:

“renal calculus” (disorders only) 12 results

The first screenshot shows an unconstrained search for 'renal calculus' in the Snow Owl MQ interface, resulting in 37 results. The second screenshot shows the same search with a 'Concept ancestor' constraint set to 'Disease', resulting in 12 results. The results list includes: Kidney stone (disorder), Calcium renal calculus (disorder), Uric acid renal calculus (disorder), and Calyceal renal calculus (disorder).

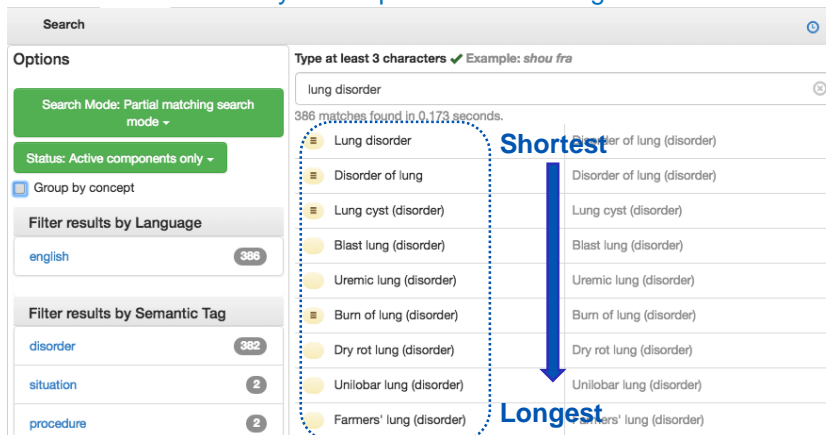
Fully Specified Name	Status	Module
Kidney stone (disorder)	active	SNOMED CT core
Calcium renal calculus (disorder)	active	SNOMED CT core
Uric acid renal calculus (disorder)	active	SNOMED CT core
Calyceal renal calculus (disorder)	active	SNOMED CT core



- 
- The diagram is titled 'Improving Search Speeds' and contains a bulleted list of strategies:
- Real time searching
    - Don't wait for the search button to be pressed
  - Indicate estimated number of matches before search
    - Give the user feedback ... if nothing matches their phrase they should stop typing and consider rephrasing
  - Optimize indexing
    - Do not assume a generic search algorithm is the best way to search a terminology like SNOMED CT
    - Implement filters for constraints in ways that minimize impact on search performance

## Order Search Results Rationally

- Shortest matching results first
  - More user friendly than alphabetical ordering

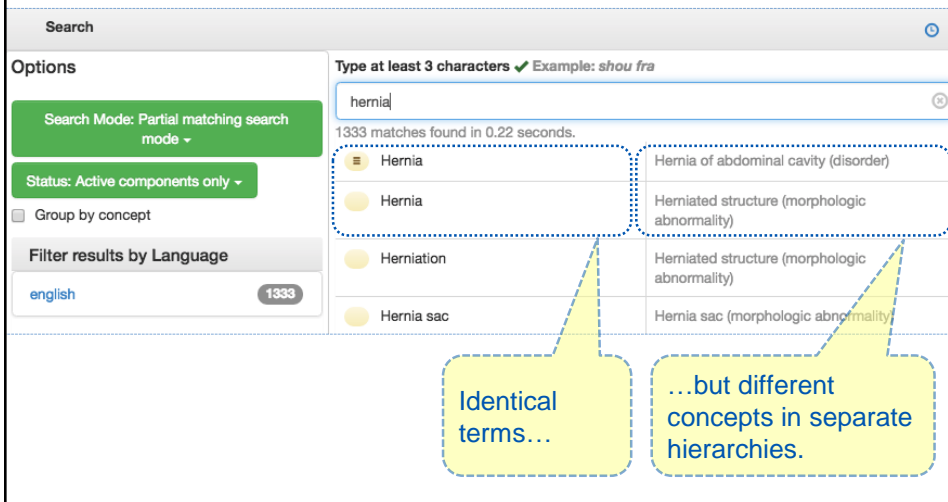


The screenshot shows a search interface with the following elements:

- Search bar:** Contains the text "lung disorder".
- Options:**
  - Search Mode: Partial matching search mode
  - Status: Active components only
  - Group by concept:
  - Filter results by Language: english (386)
  - Filter results by Semantic Tag:
    - disorder (382)
    - situation (2)
    - procedure (2)
- Results:**
  - 386 matches found in 0.173 seconds.
  - Results are ordered by shortest match length:

Match Length	Term	Full Name
Shortest	Lung disorder	Lung disorder (disorder)
	Disorder of lung	Disorder of lung (disorder)
	Lung cyst (disorder)	Lung cyst (disorder)
	Blast lung (disorder)	Blast lung (disorder)
	Uremic lung (disorder)	Uremic lung (disorder)
	Burn of lung (disorder)	Burn of lung (disorder)
	Dry rot lung (disorder)	Dry rot lung (disorder)
	Unilobar lung (disorder)	Unilobar lung (disorder)
Longest	Farmers' lung (disorder)	Farmers' lung (disorder)

## Distinguishing Identical Terms for Different Concepts



The screenshot shows a search interface with the following elements:


- Search bar:** Contains the text "hernia".
- Options:**
  - Search Mode: Partial matching search mode
  - Status: Active components only
  - Group by concept:
  - Filter results by Language: english (1333)
- Results:**
  - 1333 matches found in 0.22 seconds.
  - Results are ordered by shortest match length:

Match Length	Term	Full Name
Shortest	Hernia	Hernia of abdominal cavity (disorder)
	Hernia	Herniated structure (morphologic abnormality)
	Herniation	Herniated structure (morphologic abnormality)
	Hernia sac	Hernia sac (morphologic abnormality)

Callouts highlight the following:

- Identical terms...:** Points to the two "Hernia" entries.
- ...but different concepts in separate hierarchies.:** Points to the "Hernia" and "Herniation" entries.

## Avoid Displaying the Same Concept More Than Once


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**SNOMED CT**

- Filter search results by description type
- Filter search results by closest match

**Search**

Options

Search Mode: Partial matching search mode

Status: Active components only

Group by concept

Filter results by Language

english 372

Type at least 3 characters ✓ Example: *shou fra*


lung disorder

372 matches found in 0.133 seconds

Lung disorder	Disorder of lung (disorder)
Lung cyst (disorder)	Lung cyst (disorder)
Blast lung (disorder)	Blast lung (disorder)
Uremic lung (disorder)	Uremic lung (disorder)
Burn of lung (disorder)	Burn of lung (disorder)

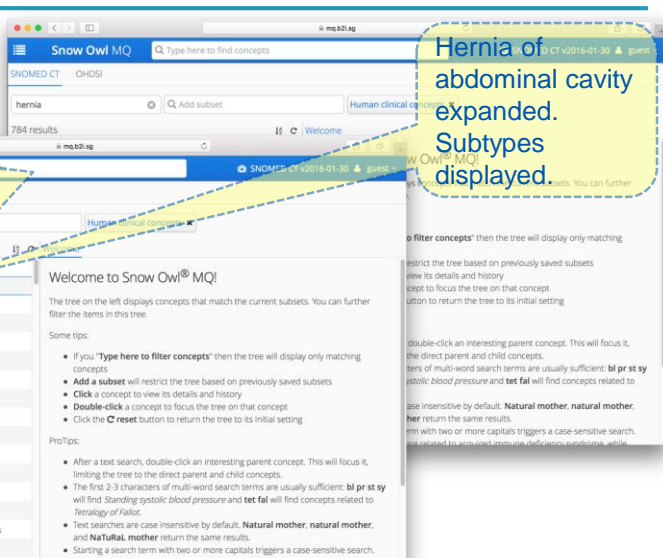
Before Two synonyms for (Disorder of lung (disorder))

## Rationalize Search Results by Subsumption


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**Before:**

Hernia of abdominal cavity collapsed. Subtypes not displayed.



Hernia of abdominal cavity expanded. Subtypes displayed.

784 results

SNOMED CT Concept (194)

- ▼ **Hernia of abdominal cavity (22)**
  - ▼ **Hernia of abdominal wall (14)**
  - ▼ **Incidental hernia (2)**
  - ▼ **Intestinal hernia (7)**
  - ▼ **Mesenteric hernia**
  - ▼ **Obturator hernia (4)**
  - ▼ **Intra-abdominal hernia (18)**
  - ▼ **Peritoneal hernia (12)**
  - ▼ **Vaginal hernia (6)**
  - ▼ **Hernia, with gangrene (13)**
  - ▼ **Hernia, with obstruction (53)**
  - ▼ **OIE - hernia (6)**
  - ▼ **Rupture of hernia**
  - ▼ **Abdominal hernia as complication of peritoneal dialysis**
  - ▼ **Epiplotele**

Welcome to Snow Owl® MQ!


The tree on the left displays concepts that match the current subsets. You can further filter the items in this tree.

Some tips:

- If you "Type here to filter concepts" then the tree will display only matching concepts.
- Add a subset will restrict the tree based on previously saved subsets
- Click a concept to view its details and history
- Double-click a concept to focus the tree on that concept
- Click the **C reset** button to return the tree to its initial setting


ProTips:


- After a text search, double-click an interesting parent concept. This will focus it, limiting the tree to the direct parent and child concepts.
- The first 2-3 characters of multi-word search terms are usually sufficient: **bl pr st sy** will find **Standing systolic blood pressure** and **tet fal** will find concepts related to **Tetralogy of Fallot**.
- Text searches are case insensitive by default: **Natural mother, natural mother, Her** return the same results.
- Starting a search term with two or more capitals triggers a case-sensitive search. **EM** with two or more capitals triggers a case-sensitive search.

 Delivering  
SNOMED CT

## SNOMED CT Data Entry

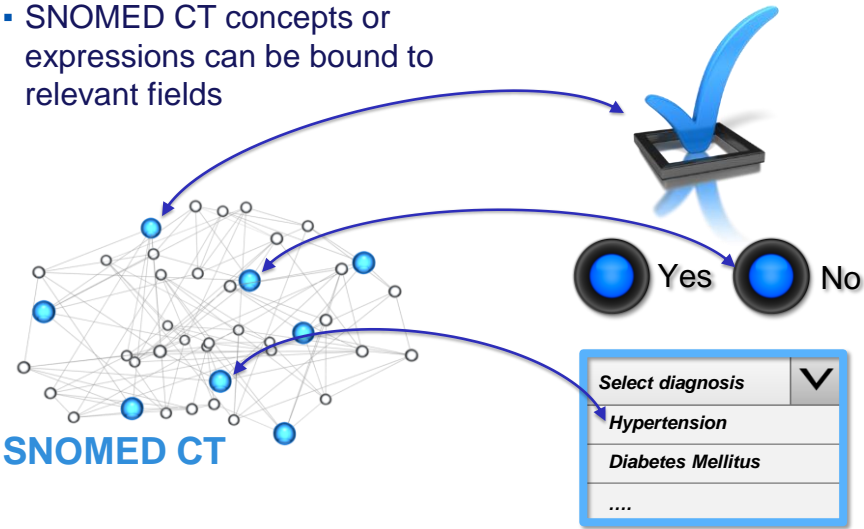
- Key Requirements
  - Interfaces are easy to use
  - Must facilitate meaning based retrieval
- Data Entry Techniques
  - Structured
    - Characteristics and tools
    - Capturing Clinical Detail with Postcoordination
  - Semi-Structured
    - Combining Structured with Free Text
  - Natural Language Processing
- Consideration of Context
  - Interface Design and Data Representation



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## Characteristics of Structured Data Entry Interfaces

- SNOMED CT concepts or expressions can be bound to relevant fields





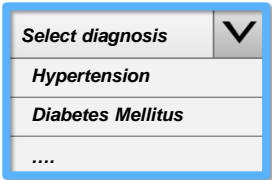
**SNOMED CT**


Select diagnosis ▼  
Hypertension  
Diabetes Mellitus  
....

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## Characteristics of Structured Data Entry Interfaces

- SNOMED CT expressions can be bound to a data entry tools such as
  - Check boxes
  - Radio buttons
  - Selection lists
  - Graphical selection
- When these tools are used to enter data, the bound SNOMED CT expressions can be stored

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## Capturing Clinical Detail with Postcoordination

*Select hip procedure:*

Fixation of hip

Total replacement of hip

Hip joint incision

*Select hip prosthesis* ▼

...

Sheehan total hip prosthesis

Elite total hip prosthesis



### Capturing Clinical Detail with Postcoordination

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```
52734007 |total replacement of hip |:  
363699004 |direct device| = 314580008  
|Sheehan total hip prosthesis|
```

Select hip prosthesis ▼  
Sheehan total hip prosthesis

### Capturing Clinical Detail with Postcoordination


ihtsdo Delivering SNOMED CT

```
373573001 |clinical finding present|: { 246090004  
|associated finding| = (65363002 |otitis media | : 246112005  
|severity| = 6736007 |moderate|,  
246456000 |episodicity| = 255217005 |first episode|) }
```

Select inflammatory disorder of ear:  
Select... ▼  
Otitis media  
Otitis externa  
Otitis media

Specify severity:  
 Mild  
 Moderate  
 Severe

Specify episodicities:  
 First episode  
 Old episode  
 New episode

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## Combining Structured Data with Free Text

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*Clinical application*

**Physical Examination**

Head:	... ..	
Ears:	Left normal Right blocked by wax	
Eyes:	Large cataract in L. eye. Scarred right retina ?traumatic.	
Mouth and Pharynx	Loose UL3 tooth Ts and As normal	▼

This text field can be bound to  
118235002 |Eye / vision finding|

Bindings like this allow relevant text to be selectively retrieved

Bindings like this can also be used to support NLP techniques by restricting the possible concepts to specific hierarchies

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## Natural Language Processing

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- Enables a computer program to analyze and extract meaning from human language
- Clinical NLP uses SNOMED CT's concepts, descriptions and relationships analyze free text



## Natural Language Processing

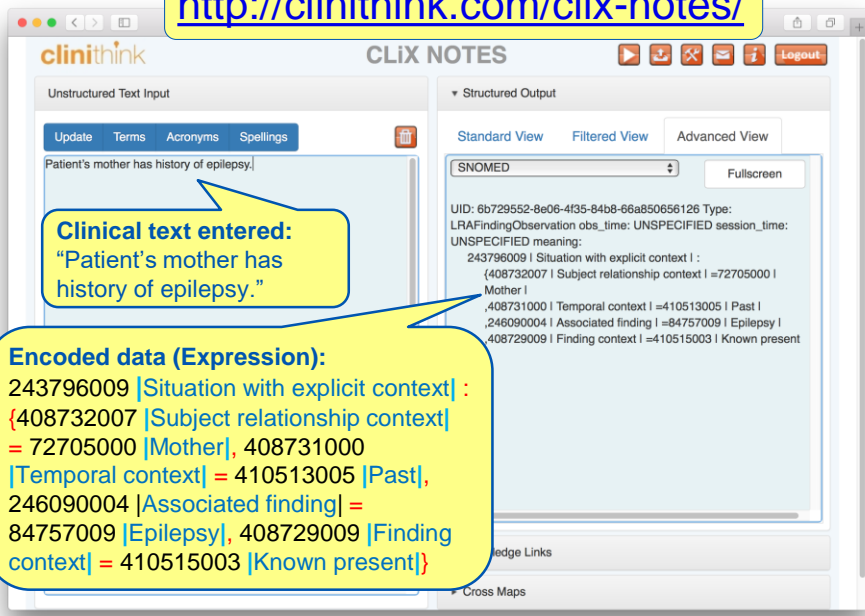
- Enables a computer program to analyze and extract meaning from human language
- Clinical NLP uses SNOMED CT's concepts, descriptions and relationships analyze free text

### Challenges

- Spelling errors, grammatical errors, abbreviations, unexpected synonyms, unusual vernacular phrases, hidden contextual information

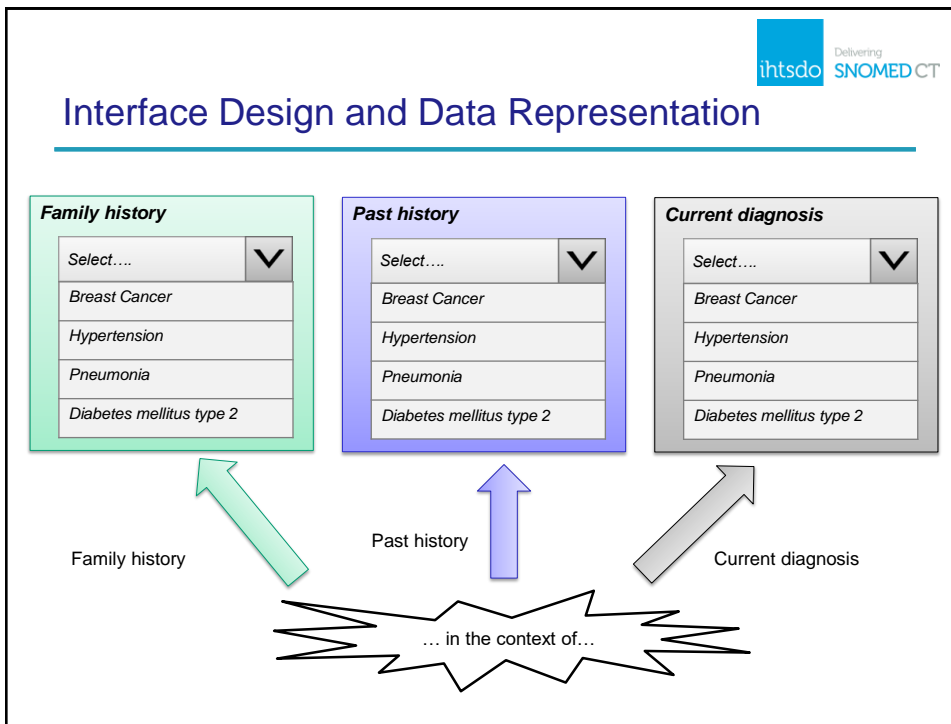


<http://clinithink.com/clix-notes/>



**Clinical text entered:**  
"Patient's mother has history of epilepsy."

**Encoded data (Expression):**  
243796009 |Situation with explicit context| :  
{408732007 |Subject relationship context|  
= 72705000 |Mother|, 408731000  
|Temporal context| = 410513005 |Past|,  
246090004 |Associated finding| =  
84757009 |Epilepsy|, 408729009 |Finding  
context| = 410515003 |Known present| }

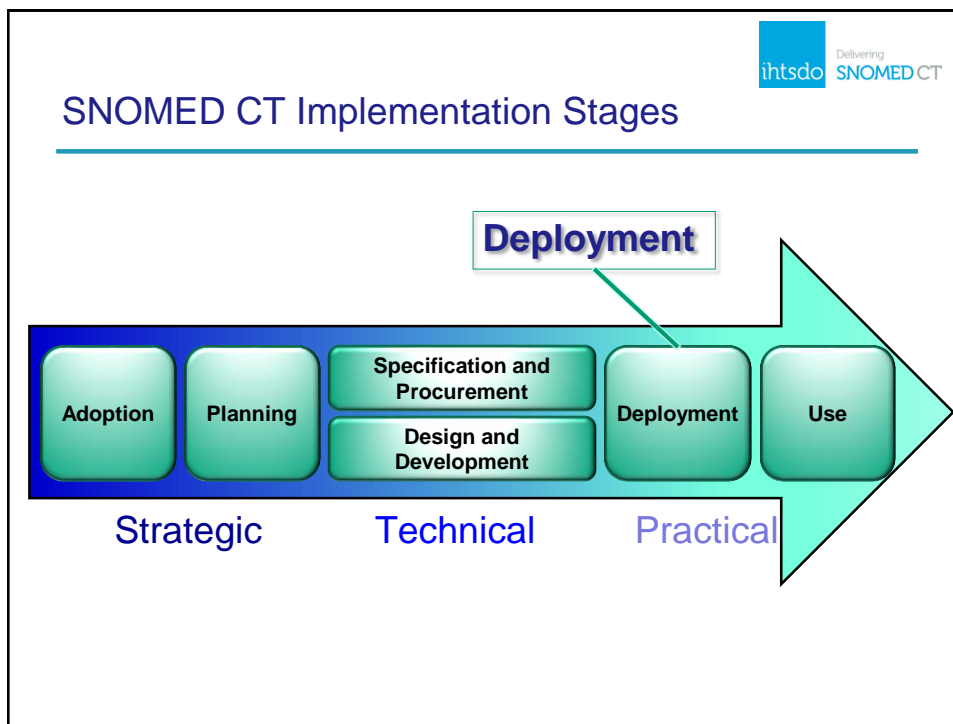


The screenshot shows a web browser displaying the IHTSDO Confluence page for the 'Search and Data Entry Guide'. The page features a search bar, a table of contents, and introductory text. The table of contents includes sections for Introduction, Search, Use Cases for Searches, and Optimizing Searches, with sub-sections for each. The page also includes a search bar and a 'Log in' button.

## Search and Data Entry

For more information please refer to:

- Search and Data Entry Guide:  
<http://snomed.org/searchguide>



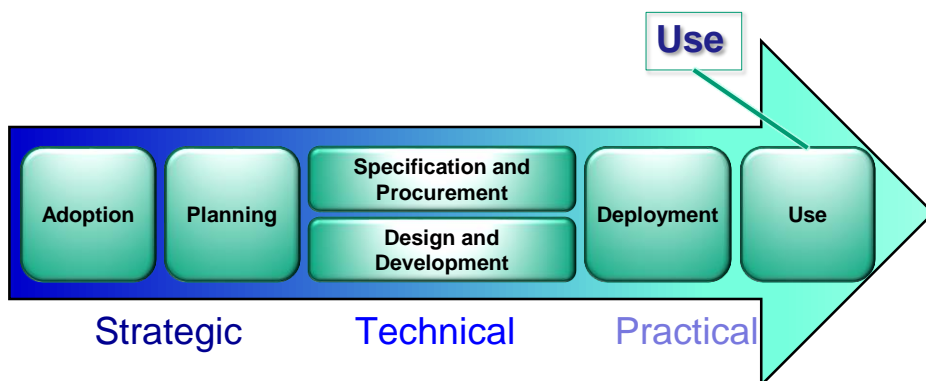
- 
- The diagram lists the tasks involved in the deployment and use of SNOMED CT enabled systems, categorized into four main areas: Delivery, Configuration, User training, and Maintenance. The ihtsdo logo and 'Delivering SNOMED CT' are in the top right corner.
- Deployment and use of SNOMED CT Enabled Systems**
- Delivery
    - Installation
    - Resolution of dependencies and integration of systems
  - Configuration for specific uses and specialties
    - User interface configuration
    - Report and query configuration
  - User training including
    - Clinical users
    - Reporting and analytics
  - Maintenance
    - SNOMED CT version updates

## Deployment Needs Informed Users

- Inform all users about benefits
  - Focus on key features and benefits of meaning-based retrieval
- Involve clinical users in configuration decisions
  - Adapt data capture and display to fit working practices in different departments
    - For example - ensuring searches and pick lists are relevant
- Inform data analysts about SNOMED CT semantics
  - SNOMED CT provides benefits for analytics
    - Full benefit realization requires awareness of the logical semantic definitions provided by SNOMED CT
  - Engage analysts in configuring reports that use these features to meet requirements

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## SNOMED CT Implementation Stages



## Use needs Motivated Users

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- Involve 'clinical champions' who understand
  - The requirements that drive day to day use of an EHR
  - The way the EHR system meets those requirements
  - The contribution of SNOMED CT to delivery of benefits
- Provide users with practical benefits
  - Motivate consistent use by providing useful and interesting information derived from their use of the system
- Respond to user input
  - Address issues and emerging requirements

## SNOMED CT in Use Around the World

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- SNOMED CT is used in more than 50 countries
- National policy endorses use of SNOMED CT in several countries, including
  - Australia
  - Canada
  - England
  - India
  - Netherlands
  - Singapore
  - Sweden
  - United States
- Examples of SNOMED CT deployments
  - <http://snomedinaction.org/>



## SNOMED in Action - Domains

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- Clinical research
  - Public health
- Computerized Physician Order Entry (CPOE)
- Electronic prescriptions
- Immunization history
- Infection prevention
- Electronic health records
  - Hospital, Emergency care, Outpatient, Primary Care, Personal
- Specialties
  - Rheumatology, Pathology, Oncology, Ophthalmology, Optometry, Surgery
- And many more ...

## Summary

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- Adoption requires identification of specific benefits
- Plan implementation taking account of key objectives
  - Plan implementation as a team effort
- A clear specification of requirements is needed for
  - Procurement
  - Design and development
- When designing and developing
  - Take note of SNOMED CT implementation guidance
- Deployment and use needs informed and motivated users
- Provide users with value from the information they record





## Links to Further Information

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- Technical Implementation Guide (TIG)
  - <http://snomed.org/tig>
- Vendor Introduction to SNOMED CT
  - <http://snomed.org/vendorsguide>
- Learn More using our E-Learning courses:
  - <http://snomed.org/elearning>
- SNOMED in Action
  - <http://snomedinaction.org>
- SNOMED CT Presentations
  - <http://snomed.org/expo>
  
- Any Questions ?