

Leading healthcare terminology, worldwide

2023

ADVANCING THE GLOBAL LANGUAGE OF HEALTHCARE

annual

**MEMBERS** 

PRODUCTS + SERVICES

**ADOPTION** 

**INNOVATION + ENABLING SUCCESS** 

**GOVERNANCE** 

# OVEIVIEW

### About SNOMED International

SNOMED International\* is a not-for-profit organization that owns and maintains SNOMED CT, the world's most comprehensive clinical terminology. We play an essential role in improving the health of humankind, by determining standards for a codified language that represents groups of clinical terms. This enables healthcare information to be exchanged globally for the benefit of patients and other stakeholders. We are committed to the rigorous evolution of our products and services, to support the growing needs of our Members and deliver continuous innovation for the global healthcare community.

### Vision

By 2025, Clinical Terminologies will be used globally, which will result in better health and improved patient outcomes, supported by one language of health.

### Mission

SNOMED International sustainably produces a global clinical vocabulary and other services that enable the clear exchange and analysis of health information for all.



# **OVERVIEW MEMBERS** PRODUCTS + SERVICES **ADOPTION INNOVATION + ENABLING SUCCESS GOVERNANCE**

### Message from the General Assembly Chair, Management Board Chair and CEO

Working hand-in-hand with Members, clinicians, healthcare leaders, technology experts, vendors and other stakeholders who play essential roles in the digital health ecosystem, in 2023, SNOMED International made a number of important advances in realizing our long-term vision of seamless interoperability and better patient outcomes globally. Part of our success in this arena can be attributed to our commitment to engage more with our Members and our broader community in more ways.

As we close out the year, we reflect on the strategy-driven achievements and successes of 2023, including a steady growth in membership: In 2023, we welcomed Andorrà, Croatia, France, Poland, Jamaica and Indonesia, for a total of 48 global Members, a testament to the value and benefits SNOMED CT promises.

### **Expanded clinical opportunities**

We have also continued to create opportunities for clinicians and our many other stakeholder groups to participate in the ongoing development and improvement of SNOMED CT, such as joining clinical research groups, leading or attending webinars,

participating in annual SNOMED CT Expos or simply connecting with us and others at industry events. We are also actively seeking to engage clinicians beyond our Member countries by creating regional clinical networks, providing an opportunity for clinicians around the world to engage with and learn about SNOMED CT. In 2023, we held our first Latin America-focused regional network webinar, conducted in Spanish, with plans for expanding to other regions in 2024. This model extends the reach of SNOMED CT in non-Member countries and introduces clinicians to the possibilities the terminology enables.

### An agile response to evolving circumstances

As an international organization, SNOMED International, collaborating closely with its Members and other stakeholders, has demonstrated its capacity to respond and react to a constantly changing and evolving modern world and its many challenges. This approach helps the organization remain current, relevant, useful and broadly used.

In 2023, for example, we worked with our Australian Members and extended stakeholders in the region



Alfhild Stokke, Chair, General Assembly (as of October 2023)

Alex Elias, Chair, General Assembly (until September 2023)

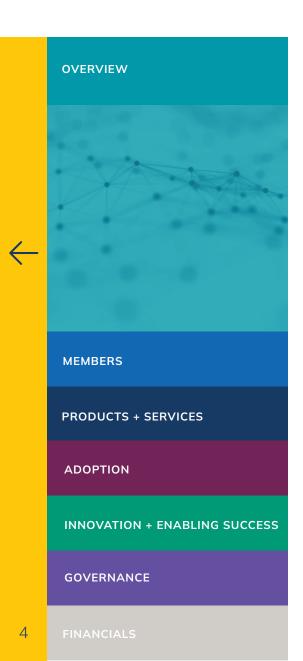


Joanne Burns, Chair, Management Board



Don Sweete, CEO SNOMED International





### Message from the General Assembly Chair, Management Board Chair and CEO continued

to quickly update our clinical terminology with climate-related content to better equip clinicians and healthcare organizations to respond to natural disasters and other climate emergencies. This is a great example of how our Members contribute their relevant findings and knowledge within their regions to improve the SNOMED CT International Edition, and, by extension, the comprehensiveness of this global terminology for all stakeholders, not just those within their region or country.

### Collaboration and cooperation key to success

Collaboration, of course, as one of our main strategic priorities, continues to drive our activities. Recognizing the key role interoperability plays in the global healthcare ecosystem, we continue to seek partnerships with other organizations that will overcome the challenges posed by isolated health data standards.

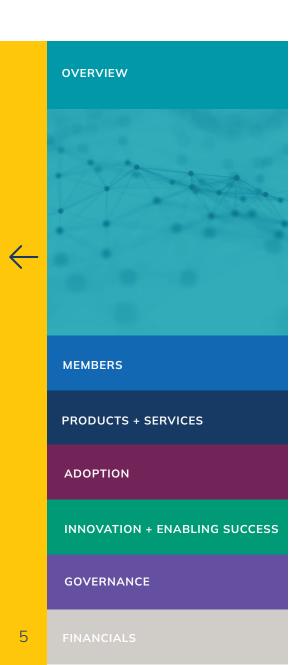
In 2023, our cooperative, collaborative work with other standards bodies and professional associations resulted in a number of important developments that make it easier for those who use multiple terminologies across the health data ecosystem. Such collaborations recognize the increasingly intertwined nature of various elements of care pathways, including research and data analytics.

### Enabling our vision of a global language of health

SNOMED International's vision is to develop a global language of health. One of the highlights in realizing that goal in 2023 was our work with the Bahmni Coalition to develop an open SNOMED CT module for the Bahmni open-source electronic medical record and hospital information system. Created for resource-constrained environments, Bahmni + SNOMED CT aligns with SNOMED International's vision of enabling better patient care globally and with it determining the digital health needs of digitally less mature countries.

Another progressive achievement the organization's approach to collaboration has enabled was the October 2023 preview launch of the LOINC Ontology, a LOINC and SNOMED CT interoperability solution. We're very excited about what this means to users of both terminologies when the production release is made available in 2024. It will be much easier to take a unified approach to implementing both standards and to meet clinical and regulatory requirements globally. This is especially important to the pathology domain and the development of fully computable, machine-readable cancer synoptic reports.





### Message from the General Assembly Chair, Management Board Chair and CEO continued

We also worked with the Institut national de la santé et de la recherche médicale (Inserm) to improve the visibility of rare diseases in terminologies by including rare disease content in the SNOMED CT International Release along with the production of a linkage table. In 2023, the map, quality-assured by INSERM, included 7,025 terms.

Working with the Monarch Initiative we signed a fiveyear collaboration agreement to develop maps to and from SNOMED CT to Human Phenotype Ontology, a standardized vocabulary of phenotypic abnormalities encountered in human disease, supporting clinical interoperability and research, and helping clinicians and researchers better understand and treat hereditary, genetic and other conditions. By the end of 2023, the joint mapping pilot was completed, with plans to issue an alpha release in 2024 to garner feedback from our Member community.

Our collaboration with the European Directorate for the Quality of Medicines & HealthCare (EDQM) will also make it easier for researchers and clinicians to link information required for drug regulation with information captured as part of care using SNOMED CT.

### Exploring and understanding emerging technologies

More broadly in the emerging technologies realm, we made a number of advances to better understand the potential and significance of technologies such as artificial intelligence (AI) within our ecosystem. Not only has the organization spent time exploring how AI shapes our products, services and processes, but inquiry is ongoing as to how SNOMED CT can shape the continued evolution of AI. At our SNOMED CT Expo in Atlanta, we hosted a packed half-day pre-conference symposium on the topic, featuring guest speakers with AI expertise who focused on the role of terminologies such as SNOMED CT in advancing AI's use and benefits. AI will continue to be a key focus for the organization throughout 2024 and beyond.

AS WE LOOK AHEAD TO 2024, WE EXPECT TO CONTINUE TO GROW AND HONE OUR ENGAGEMENT EFFORTS WITH OUR MANY STAKEHOLDER GROUPS AS WE CHART THE COURSE FOR OUR 2025-2030 STRATEGY.



# **OVERVIEW** MEMBERS PRODUCTS + SERVICES **ADOPTION INNOVATION + ENABLING SUCCESS** GOVERNANCE 6

### 2023 Summary



86% of strategic deliverables completed



International Edition releases

15

Derivatives, freesets and refsets released

> **Z** panish

Spanish language releases



New & renewed collaboration agreements



19
International industry events attended



60

Hours of Expo sessions





18
News releases
& blogs
published



13

Education courses and learning pathways offered



### Value for Members

SNOMED International demonstrates its multifaceted value for Members

# **OVERVIEW MEMBERS** PRODUCTS + SERVICES **ADOPTION INNOVATION + ENABLING SUCCESS**

### **OVER 2023,**

snomed international continued to focus on delivering maximum value for our Members in a variety of ways and approaches. While the

### Case for Investment for SNOMED CT

deployments show
the financial benefits
Members can expect,
a review of just five of
many highlights over
the past year reveals
a multitude of other
benefits we delivered
to support Members
and other stakeholders,
including:

### Social Care

Evolving SNOMED CT to best serve improvements in patient outcomes and meet the needs of integrated health and social care systems sustainably has been a 2020-2025 strategic priority for SNOMED International. In 2022, we surveyed our Members as part of a pilot project in a select number of countries to better understand the context and meaning of social care and how nonmedical factors can affect a person's overall health and health outcomes. Since then, we have continued to examine ways to expand and enhance SNOMED CT use in social care, to better understand the intersection between health and social care, and to determine future priorities for the clinical terminology in this domain. And while the SNOMED CT International Edition already contained a variety of content to support social care, survey responses from 18 Members, together with other elements of analysis, are helping us to identify areas to further explore in this domain. Additionally, since January 2022, internationally relevant social terminology content from the Gravity Project continues to be added to the SNOMED CT International Release. The Gravity Project is a collaborative publicprivate initiative launched in May 2019 with the goal of developing consensus-driven data standards to support the collection, use, and exchange of data to address social determinants of health.

### Simplex Toolkit

Part of our commitment to supporting our Members through all stages of their SNOMED CT journey is by developing more tools to implement and maximize the value it brings. In 2023, the organization launched the Simplex Toolkit, a free, open-source and self-managed resource which simplifies the creation and maintenance of "simple" SNOMED Extensions. The Simplex Toolkit imports data from existing free SNOMED International services and local spreadsheets such as Refset & Translation tool exports, Snap2SNOMED maps, Weblate translations, etc. Simplex handles metadata concept creation, namespaces, and lds generation. It also supports integration with the organization's classification and release validation services and creates RF2 releases ready to use in browsers and clinical implementations. The toolkit was updated in 2023 to include translations. At the close of 2023, Member early adopters began to use the Simplex Toolkit.

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### Bahmni Coalition

We achieved a major collaboration milestone in 2023 with the completion of a joint initiative to develop a SNOMED CT module for integration with the Bahmni Coalition's open source Electronic Medical Record geared at digitally maturing implementers in resource-constrained environments. Working with Bahmni, we developed a module that demonstrates how SNOMED CT can be used by opensource EMRs to add structured meaning to clinical information, supporting efficient exchange among healthcare systems. This exciting work supports digital health in regions at early stages of that process, whether they are SNOMED International Members or not.

### Entity Linking Challenge

Late in 2023, SNOMED International partnered with artificial intelligence consultancy Veratai, Driven Data, an online machine learning competition platform, and PhysioNet, provider of a challenge dataset, to launch an entity linking challenge. The objective of this competition? To train machine learning modules and link spans of text in clinical notes with specific topics in SNOMED CT. The competition requires participants to identify candidate spans in the unstructured data and link them to a particular concept in a knowledge base of SNOMED CT's medical terminology. The promise of successful entity linking is that it enables the free-text data currently stored in the clinical notes of clinicians around the globe to be analyzed, shared and used to develop new medicines, treatment pathways, and better patient outcomes. This exciting undertaking will benefit all our Members and users in the long run. It also shows how we use new technologies that fall under the artificial intelligence banner to benefit healthcare and improve healthcare data.

### LOINC

5

### LOINC® from Regenstrief and

SNOMED International announced the preview availability of the LOINC Ontology: A LOINC and SNOMED CT interoperability solution. LOINC, short for Logical Observation Identifiers Names and Codes, is a worldwide standard used in 193 countries and available in 20 languages for identifying health measurements, observations and documents enabling the identification, exchange and collection of data across health systems. Since 2022, both organizations have been collaborating to reduce duplication between LOINC and SNOMED CT and enhance implementers' ability to use the two terminologies together, increasing the computability of LOINC and making the more granular observables in LOINC available to be used in a SNOMED CT format integrated with SNOMED CT concepts.

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### 2020-2025 Strategy Updates

Our focus on our strategy deliverables since 2020 has strengthened our position as a terminology integrator, advanced our approach to implementation with hands-on expertise, support and resources, and increased SNOMED CT adoption in digitally maturing countries.

In 2023, the organization completed 88% of the strategic and 98% of the operational deliverables included in this year's work plan. The year's activities reflect our commitment to embracing innovation across the board, from how we approach facilitating global use of SNOMED CT, to breaking down barriers to adoption, to innovative partnerships and licensing arrangements.

We are well on track to completing all of our 2020-2025 strategic deliverables by the end of 2024 with less than 15% of the 233 products and services, adoption and innovation-focused deliverables remaining to action.



The organization is on track to completing 100% of 233 products, services, adoption and innovation-focused strategic deliverables by 2024.





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# Members



### **Our Members**

AMERICAS	EUROPE, MIDDLE EAST & AFRICA			ASIA PACIFIC
Argentina Canada Chile El Salvador Jamaica United States Uruguay	Andorrà Austria Belgium Croatia Cyprus Czech Republic Denmark Estonia Finland France Germany	Iceland Ireland Israel Jordan Lithuania Luxembourg Malta Netherlands Norway Poland Portugal	Republic of Slovenia Saudi Arabia Slovak Republic Spain Sweden Switzerland United Arab Emirates United Kingdom	Australia Brunei Hong Kong, China India Indonesia Kazakhstan Malaysia New Zealand Republic of Korea Singapore Thailand



In 2023, SNOMED
International welcomed six
new Members: Andorrà,
Croatia, France, Poland,\*
Jamaica and Indonesia, for
a total of 48.

SNOMED CT is now used by one-third of the world's population.

\* Poland is a returning Member

### 2023 Member survey results

Every year SNOMED International surveys its Members to better understand how they are using the clinical terminology and what the organization can do to better meet their needs. The vast majority (almost 97%) of our Members who completed the 2023 survey reported that SNOMED International is easy to do business with. Most respondents (almost 94%) also said they believe SNOMED International communicates in an open, fair and transparent manner; almost 97% said SNOMED International products and

services meet their overall expectations, while more than 80% reported an overall level of satisfaction with SNOMED International products and services (an increase of more than 22% over 2022's responses to this question). And while the survey responses also provide a wealth of helpful feedback on areas the organization could improve upon, it also helps SNOMED International understand where it is closely aligned with Members on the organization's priorities for 2024.

As part of the process of integrating new Members, SNOMED International offers a comprehensive onboarding program to support countries at all stages of their implementation journey and understand what they will need to do to define their roadmap and achieve their goals.



### Member Success Story: Australia



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## project spotlight

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### SNOMED CT-AU value sets support standardised coded text entry in the clinical information models

Within the information model, any data that is intended to be recorded as text can either be recorded as a free text narrative or it can be structured by selecting a word or phrase from a value set. Selection from a known, publicly shared value set from a standardised clinical terminology greatly improves the quality and consistency of data recording. Benefits include correct spelling, acceptable synonyms and limiting data entry selection to clinically appropriate values based on the context. Reusing agreed and validated terminology value sets within the clinical information models further enhances data exchange, clinical decision support, querying and analysis of health data.

In Australia, SNOMED CT-AU has been adopted as a standard for recording structured values in health records. In the Sparked program, SNOMED CT-AU is the primary terminology from which value sets will be derived to support standardised coded text entry in the program's clinical information models. The Sparked program is a community comprising government, technology vendors, provider organizations, peak bodies, practitioners, and domain experts to accelerate the creation and use of national FHIR standards in health care information exchange. It is a partnership of HL7 Australia, the Department of Health and Aged Care, the Australian Digital Health Agency (ADHA), and CSIRO. The government-initiated and funded program is creating open standards in high-priority national

use cases and working collaboratively with the international FHIR community and other FHIR initiatives.

Many SNOMED CT-AU value sets have already been developed through work in the ADHA and it is intended to re-use these nationally agreed upon value sets where clinically agreed as appropriate. These value sets are published in Australia's National Clinical Terminology Service.

The information model in the first release of the Australian Data for Interoperability (AUCDI R1) developed by the Sparked program will recommend SNOMED CT-AU value sets for clinical information where relevant for Adverse reaction risk, Procedures, Medication use, Vaccination administered, Tobacco smoking status, Encounter information and Sex and Gender. These value sets will also be used as bindings for the Australian Core FHIR Implementation Guide (AU Core FHIR IG).

The breadth of scope for the Sparked's program means that there are many value sets that have not been previously developed so new SNOMED CT-AU value sets are being developed to match the requirements of the information models. These include Pathology and Diagnostic Imaging referral sets to support an Australian eRequesting FHIR IG.



# Member Success Story: Norway's SNOMED CT-encoded Dental Data Analysis a Powerful Tool with Much Potential



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## project spotlight

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### Analysis can lead to better treatments and improved patient care

At the 2023 SNOMED CT Expo in Atlanta, Jørn Andre Jørgensen, DDS, Vestfold County, Norway, presented a statistical analysis with (the programming language) R of a SNOMED CT-encoded dentistry dataset from a Norwegian Electronic Health Record (EHR) highlighting the potential such an approach offers for broader use.

The analysis was based on a 310,000-patient cohort and 29 million "events," starting from 2006, providing a robust and statistically relevant pool of information to draw on.

In dentistry, clinical concepts or ideas are represented graphically in EHRs. The diagnosis, specific tooth and location on tooth are captured with post-coordination, which provides a code that can be stored and queried; all data collected is a combination of pre-coordination (a SNOMED CT expression containing a single concept identifier that represents an idea) and post-coordination (a SNOMED CT expression containing two or more concept identifiers that represent an idea).

The analysis, which was conducted using Snolytical, SNOMED International's health data analytics demonstrator tool, revealed a wealth of information that can be used not just to improve dental clinicians' decision-making, but that could theoretically be applied to local, regional, national or international level practice in dentistry and in other domains.

That information includes:

- Trends over time, such as whether there have been fewer examinations or fillings over specific time periods, such as during the COVID-19 pandemic.
- Analysis of correlations. For example, if a patient gets a tooth filled, what are the chances that the patient goes on to experience toothache?
- Analysis of the outcomes of clinical practice using survival graphs. Does a particular procedure improve the survival of a tooth? Is it justified to fill deciduous (primary teeth in children) or decayed teeth? Does leaving a decayed deciduous tooth increase the caries risk to adjacent teeth?
- Analysis of population health and population health initiatives.
   It can answer questions such as whether there are high levels of caries/tooth decay in a particular population and determine the prevalence of specific conditions in that population, for example. At the level of population health, it can also answer questions such as whether the prevalence of caries decreases once fluoridated drinking water is introduced.

Ultimately, this analysis can lead to better treatment decisions, more efficient dental services, improved patient care, and better population health.

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# products + services

In 2023, we updated and refined existing products, tools and services, while developing a number of new ones – all a reflection of our commitment to identifying and adopting innovative practices and approaches to the ongoing development and maintenance of SNOMED CT, and to remaining an agile organization able to respond nimbly to an ever-evolving healthcare landscape.



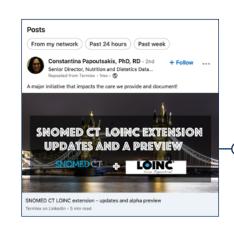
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### 2023 Highlights

### New and updated products, tools and services include:

- Moving the release of the International Edition to the first day of each month, rather
  than the last day, to improve the efficiency of the release cycles and provide more time
  for stakeholders who base their extension and derivatives on the International Edition
  releases. Due to increased efficiencies, we also began to release the SNOMED CT
  International Edition in Spanish on March 31 and September 30 each year, from
  September 2023 onwards;
- Delivering new or updated tools and services to support implementers at all stages
  of their SNOMED CT journey, and finding ways to better meet our Members' needs: We
  introduced an updated Reference Set Management tool to allow people the quickest
  and most efficient way possible to manage reference sets, as well as updates to
  Snap2SNOMED, a hosted tool for SNOMED International Members to collaboratively
  create and maintain simple maps to SNOMED CT;
- Working with LOINC by Regenstrief Institute to jointly release for review and
  feedback the LOINC Ontology: A LOINC and SNOMED CT Interoperability Solution,
  which was created by modeling 23,840 LOINC terms using SNOMED CT observable
  entity templates. The ontology comprises a special set of LOINC codes built on
  a framework for naming and classifying the key attributes of clinical documents,
  providing consistent semantics for documents exchanged between systems for many
  uses, minimizing duplication between LOINC and SNOMED CT and making it easier for
  stakeholders to use the two terminologies together;







# **OVERVIEW MEMBERS** PRODUCTS + SERVICES **ADOPTION INNOVATION + ENABLING SUCCESS GOVERNANCE**

### New and updated products, tools and services include:

- Updating the Simplex tool kit to include translations. A free, open-source and selfservice tool, it imports data from existing free SNOMED International services and from local spreadsheets and is intended to be a tool kit for creating simple, self-managed SNOMED CT extensions;
- Initiating the endeavor to improve the choices available for assessing implementation maturity; striving to develop a practical self-assessment instrument aimed at recognizing the level of maturity in adopting, implementing and customizing SNOMED CT; and
- Working with software providers on implementing the Terminology Server Syndication Standard to enable automated distribution of SNOMED CT to global, national and local terminology servers. This is key to enabling the adoption of SNOMED CT through the automation of importing and updating the terminology in Terminology Servers around the globe.



In 2022, SNOMED International introduced the production version of the International Patient Summary (IPS) Terminology, an electronic health record extract containing essential healthcare information for use in the unscheduled, cross-border care scenario, as well as for local, regional and other care scenarios. The IPS is a standardized set of basic clinical data that includes the most important health and care related facts required to ensure safe and secure healthcare. It is now updated and released annually; in 2023, it was released in November. Learn more





### 2023 Release Timeline

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In 2023, after receiving community feedback, SNOMED International decided to delay until 2024 some derivative products that would have been published quite close together due to the change in the SNOMED CT International Edition release schedule.

### JANUARY

- SNOMED CT International Edition
- SNOMED CT International Edition Derivative Product Releases - January 2023\*:
- » SNOMED CT European Directorate for the Quality of Medicines & HealthCare (EDQM), Council of Europe Dose Forms Map ALPHA Release (published January 2023)
- » SNOMED CT to GMDN map package (published March 2023)
- » SNOMED CT MedDRA Maps package (published April 2023)
- » International Patient Summary Terminology (Beta) (published April 2023)
- » SNOMED CT European Directorate for the Quality of Medicines & HealthCare (EDQM), Council of Europe Dose Forms Map Production Release (published May 2023)

### MARCH

- SNOMED CT International Edition
- Managed Service: Belgium, Denmark, the Netherlands, US

### MAY

- SNOMED CT International Edition
- Managed Service: Belgium, Estonia, Sweden

In 2023, SNOMED International changed the SNOMED CT International Edition production release day to the first of the month instead of the last. The move was made to eliminate the ambiguity of release dates, prevent conflicts with certain types of extension content and improve the efficiency of the release cycles. It also provides stakeholders who base their extension and derivatives on the International Edition releases additional time. Learn more.

- SNOMED CT International Edition
- Managed Service: Austria

**FEBRUARY** 

- SNOMED CT International Edition
- SNOMED CT Spanish Edition
- Managed Service: Ireland, New Zealand and Norway

**APRIL** 

- SNOMED CT International Edition
- Switzerland Extension

JUNE

\* The derivative products above that are stated for release in January and July are dependent dates and not confirmed published dates. These derivative products may be released in future International Edition monthly releases within the calendar year.

### 2023 Release timeline

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### JULY

- SNOMED CT International Edition
- Managed Service: Ireland extension
- SNOMED CT International Edition Derivative Product Releases July 2023\*:
- » SNOMED CT to GMDN map package (published September 2023)
- » ORPHANET Map release (published October 2023)
- » DICOM freeset RF2 release (published October 2023)
- » International Patient Set (IPS) RF2 refset + freeset (published October 2023)
- » Odontogram refset (published November 2023)
- » General Dentistry refset (published November 2023)
- » International Patient Summary Terminology (IPST) package (PRODUCTION) (published November 2023)
- » Global Patient Set (GPS) RF2 refset + freeset (published November 2023)
- » Integrating the Healthcare Enterprise (IHE) freeset (published November 2023)

### OCTOBER

- SNOMED CT International Edition
- Managed Service for Norway, Ireland and New Zealand

### DECEMBER

- SNOMED CT International Edition
- Switzerland Extension (First production release)
- Managed Service for Norway (Monthly Release)

- that enables SNOMED
  International Members to
  manage and distribute a
  - release of a SNOMED CT local extension from

**Our Managed Service** 

is an online service

- start to finish in a simple,
- standard manner. By the
- end of 2023, there were 15 Managed Service
- Members:
- Australia
- Austria
- Belgium
- Denmark
- Estonia
- France
- Ireland
- New Zealand
- The Netherlands
- Norway
- South Korea
- Spain
- Sweden
- Switzerland
- USA

- Managed Service for Austria and Korea
- No SNOMED CT International Edition: release day changed to the first of the next month

**AUGUST** 

- SNOMED CT International Edition
- SNOMED CT Spanish Edition
- Managed Service for US, Denmark and the Netherlands

SEPTEMBER

- SNOMED CT International Edition
- IPS Terminology
- Managed Service for Norway (Monthly Release)
- Managed Service for Belgium, Estonia and Sweden

NOVEMBER

\*The derivative products above that are stated for release in January and July are dependent dates and not confirmed published dates.

These derivative products may be released in future International Edition monthly releases within the calendar year.

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### **Content Enhancements**

In 2023, SNOMED International completed 95% of the 4,367 content request submissions we received.

The following details the highlights of the content changes made throughout the year.



### **ANATOMY**

The SNOMED CT Anatomy project focuses on six subprojects to improve the quality of anatomy content in SNOMED CT. In 2023, 69.8% of the nervous system content was remodeled, while 30.2% remained to be modeled. The percentage of defined concepts increased to 58.1% (2,593 concepts).



### **DENTISTRY**

Twenty-two new concepts were added to the General Dentistry refset.



\* In 2023, the August 31 release was published on September 1, meaning one fewer release was published in 2023.



### **CANCER SYNOPTIC REPORTING**

The SNOMED International Cancer Synoptic Reporting Project reviews, elaborates, models, deploys and tests expanded SNOMED CT content to serve the structured reporting of detailed anatomic pathology and molecular pathology data in the diagnosis, staging and treatment of cancer. In 2023, the group began to develop the Cancer Synoptic Reporting Implementation Guide, with plans to publish it in 2024.

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### Content enhancements



### **DRUGS**

- New content was added as requested throughout the year and promoted to the SNOMED CT International Edition release.
- The Drug Content Analysis Project, which was formed in 2022 to address the need for increased volume of international clinical drug content in the SNOMED CT International Release, completed its review of the first set of candidates for promotion to the clinical terminology. In 2023, more than 100 anti-infective clinical drug concepts were promoted and a list of anti-diabetic drugs was developed for multi-country review; the next area of drug content for review will be anticonvulsants.



### INTERNATIONAL LEAGUE AGAINST EPILEPSY

In 2023, following on our 2022 collaboration agreement with the International League Against Epilepsy (ILAE), we continued working jointly with ILAE subject matter experts in the following areas:

- Focal anatomical seizures
- Neonatal seizures
- Status epilepticus
- Focal epilepsies



### KAISER PERMANENTE

Kaiser Permanente is one of the first healthcare organizations to implement a SNOMED CT enabled electronic health record (EHR). The organization's Epicbased enterprise electronic medical record hosts the records of more than 10 million patients and uses a set of clinician and patient-friendly terminologies, collectively known as the Convergent Medical Terminology (CMT), with SNOMED CT as its core reference terminology. KP has made their contributions to SNOMED CT available to the broader community by donating CMT to SNOMED International and the US National Library of Medicine (NLM). As part of our ongoing agreement with Kaiser Permanente to accept CMT content and incorporate it into SNOMED CT, in 2023, 1,718 concepts were submitted and promoted to the SNOMED CT International Edition release.



### **ORGANISM**

More than 400 new organism concepts were promoted to the SNOMED CT International Edition in 2023.



### Content enhancements

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### RARE DISEASES



SNOMED International works with INSERM, the French Institut national de la santé et de la recherche médicale, to include rare disease content in the SNOMED CT International Release and to provide a linkage table. In 2023, the map, which is quality-assured by INSERM, included 7,025 terms.



### **SOCIAL CARE**

Following the establishment of a content gap analysis in 2022, in 2023 we added 100 new concepts to SNOMED CT International Edition, completed the requirements and use cases and began content analysis. The domains we focused on in 2023 include:

- Services for older people including home care/support, long-term care and palliative care;
- Services for people with mental health problems; and
- Services for people with alcohol and substance misuse.



### TRADITIONAL MEDICINE PILOT PROJECT

Building on the work completed in 2022, we continued to collaborate with Member countries, the World Health Organization and the International Organization for Standardization in this area for the future development of traditional medicine content.



The World Health Organization (WHO) and SNOMED International share and serve a common set of users. SNOMED International collaborates with the WHO to support the implementation efforts of those users globally. The two organizations have worked together to achieve this goal since 2010, primarily by creating maps between WHO's (ICD) versions 10 and 11 and SNOMED CT. ICD-10 (10th Revision) is designed to promote international comparability in the collection, processing, classification and presentation of mortality statistics; ICD-11 (11th revision) allows the systematic recording, analysis, interpretation and comparison of mortality and morbidity data collected in different countries or regions and at different times and ensures semantic interoperability and reusability of recorded data for different use cases beyond mere health statistics, including decision support, resource allocation, reimbursement, guidelines and more.



# Logical Observation Identifiers Names and Codes (LOINC) and SNOMED International Release Draft Preview of LOINC Ontology

**OVERVIEW** 

**MEMBERS** 

**PRODUCTS + SERVICES** 

# project spotlight

**ADOPTION** 

**INNOVATION + ENABLING SUCCESS** 

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### Collaborative effort provides unified approach to implementation

In October 2023, following our 2022 collaboration agreement, SNOMED International worked with LOINC by Regenstrief to create an extension of SNOMED CT for the LOINC terminology and release a draft preview of the LOINC Ontology. The ontology comprises 23,840 LOINC terms modeled as SNOMED CT observables built on a framework for naming and classifying the key attributes of clinical documents, providing consistent semantics for documents exchanged between systems for many uses.

Completing this work makes it easy for implementers to take a unified approach to implementing both standards, giving them a choice of which codes to use for ease of implementation, and providing a single solution that meets clinical and regulatory requirements, globally.

Other benefits of this collaborative effort include:

- Providing LOINC pathology and lab content in an understood format to countries who do not currently use LOINC;
- Providing the ontological framework for LOINC to meet the needs of the community for a computable representation of LOINC;
- Leveraging LOINC and SNOMED CT subject matter expertise; and
- Setting a precedent for other domains and standard collaborations.

In 2024, after incorporating the feedback received on the preview release, SNOMED International and the Regenstrief Institute hope to announce the first production release. We will keep the ontology up to date with each release of LOINC and the related version of the SNOMED CT International Edition.





# **OVERVIEW MEMBERS** PRODUCTS + SERVICES **ADOPTION INNOVATION + ENABLING SUCCESS GOVERNANCE**

### 2023 Content Partners and Collaborations

The quality, quantity and focus of existing and new collaborations, alliances and partnerships SNOMED International maintained and established in 2023 reflect the organization's ongoing commitment to harmonize healthcare terminology across multiple domains:

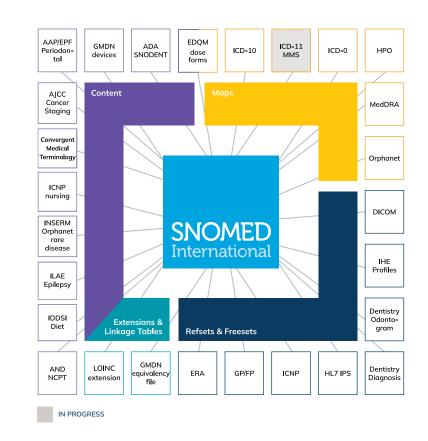


### American College of Surgeons/American Joint Committee on

Cancer: In 2022, the American College of Surgeons (ACS) and SNOMED International entered into a licensing agreement to include agreed-upon American Joint Committee on Cancer (AJCC) references in SNOMED CT. The focus of the agreement enables SNOMED International to include updated AJCC staging concepts critical to understanding cancer and treating patients while eliminating outdated AJCC content no longer relevant to clinical care within SNOMED CT. In 2023, SNOMED International and the AJCC agreed to expand their discussions to include the Union for International Cancer Control (UICC) with the goal of adding staging values from the UICC's Tumour Nodes Metastases Classification of Malignant Tumours as well.



Barts Health NHS Trust Biobank pilot: In 2023, we finalized the project plan and initiated the development of a roadmap for a pilot project with Barts Health NHS Trust UK. The goal of this pilot is to investigate Natural Language Processing, content creation and an end-to-end process for clinical data collection in the UK Biobank.



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**Bahmni** Bahmni

The Bahmni Coalition integration project: In 2023,

SNOMED International worked with the Bahmni Coalition on a joint initiative to develop a SNOMED CT module for integration with Bahmni's open-source electronic medical record. Serving the clinical terminology needs of lower digitally mature countries, Bahmni + SNOMED CT delivers no-fee access to SNOMED CT and aligns with our vision of enabling better patient care everywhere, not just in our Member countries. In addition to providing access to standardized and accurate clinical data and clinical decision support, the initiative supports the development of better healthcare policies and public health initiatives for any country at any stage of their digital health journey.



European Directorate for the Quality of Medicines & HealthCare, Council of Europe: Early in 2023, SNOMED International and EDQM signed an agreement governing the creation, maintenance and distribution of a map between both organizations' terminologies, focusing on developing mechanisms for releasing, maintaining and updating the mapping between the list of Dose Forms in the EDQM Standard Terms database and the equivalent content in SNOMED CT. The EDQM to SNOMED CT Dose Forms map was published in April 2023. The map was created in Snap2SNOMED, and extracted and prepared for release using the new Simplex tool kit, which simplifies the creation of RF2 packages in projects outside the Managed Services.



International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use

(ICH): In 2021, SNOMED International and ICH announced plans to collaborate to release new maps annually between global medical terminologies SNOMED CT and Medical Dictionary for Regulatory Activities (MedDRA). A release schedule detailing all the necessary steps and responsibilities has been developed and agreed upon by both SNOMED International and MedDRA Maintenance and Support Services Organization (on behalf of ICH) to ensure that all timelines are adhered to and that the maps meet users' needs. In 2023, we continued to collaborate with the MedDRA MSSO on the development and delivery of these maps, and in April, we released the 2023 Maps Package.



International Organization for Standardization (ISO)
Technical Committee (TC) 215: SNOMED International works with this ISO committee, which focuses on standards development, responding to information arising from ISO TC 215 subcommittees and working groups, SNOMED International Members and other sources on issues identified as requiring action. In 2023, we participated in numerous working groups and ad hoc groups including medicinal products, modeling and frameworks, terminologies, governance and advisory groups, and genomics.



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**IPS** 

Joint Initiative Council and the International Patient Summary (IPS): SNOMED International is part of a group of standards development organizations, including HL7, Integrating the Healthcare Enterprise (IHE), CEN (the European Committee for Standardization) and ISO, that are part of the Joint Initiative Council for Global Health Informatics Standardization, which first published the Patient Summary Standard Set, a minimal and non-exhaustive set of basic clinical data of a patient, specialtyagnostic, condition-independent, but readily usable by all clinicians for the unscheduled (cross-border) patient care. These organizations, driven by global organizations such as the G7, G20 and the Global Digital Health Partnership (GDHP), work together to ensure a coordinated approach to maintaining and updating the IPS to support its global implementation. In November 2023, SNOMED International published the IPS Terminology, an evolution of the HL7 IPS Free Set that provides advanced features of SNOMED CT for non-affiliates to use in their IPS solutions. SNOMED International is also participating in a Task Group focused on forming a strategic partnership between the Joint Initiative Council and the GDHP and exploring governance of IPS standards coordination.

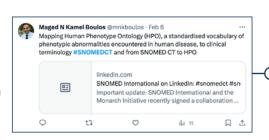


Monarch Initiative: In 2023, SNOMED
International and the Monarch Initiative
signed a five-year collaboration agreement
to develop maps from the clinical terminology
SNOMED CT to Human Phenotype
Ontology (HPO), a standardized vocabulary
of phenotypic abnormalities encountered
in human disease, and to HPO from
SNOMED CT. By the end of 2023, the HPO/
SNOMED mapping pilot of 1,000 maps had
been completed, with plans to issue an alpha
release in early 2024 for Member feedback.



### IN PROGRESS AT THE END OF 2023

Foundations for collaborations with the Nomenclature for Properties and Units, Unified Nomenclature of Vaccines, the Union for International Cancer Control and RACSEL (American Network of Cooperation on Electronic Health) were established in 2023, with plans to advance them in 2024.







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# adoption

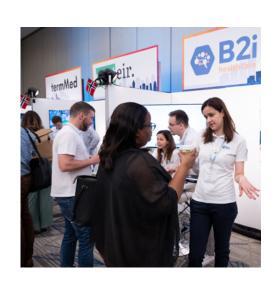
Our five-year strategy includes as one of its key pillars increasing adoption of SNOMED CT. Adoption touches most of our stakeholder groups and covers everything from education and onboarding to licensing agreements and the development of tools and resources, among others.



# **OVERVIEW MEMBERS** PRODUCTS + SERVICES **ADOPTION INNOVATION + ENABLING SUCCESS GOVERNANCE**

### **Engaging our Stakeholders**

In 2023, we continued to seek and expand the number of opportunities to engage with the broader SNOMED CT community and to encourage stakeholder participation in the development of SNOMED CT. In addition to hosting our annual Expo conference, twice-annual business meetings and regular webinars, attending and speaking at industry events, strengthening our educational offerings, and maintaining an active social media presence, we routinely seek feedback from stakeholders on various aspects of SNOMED CT. In 2023, for example, we requested feedback from the radiology community on changes to improve the clinical quality and consistency of the radiology hierarchy.







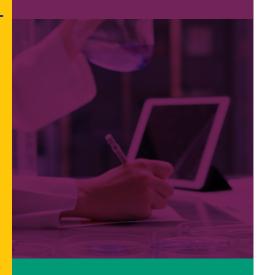




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### **Implementation**

After launching an implementation-specific portal in 2022, we continued to strengthen the Implementation Support Team offerings, developing several products and services designed to support successful SNOMED CT implementations. Key activities over the year include:

- Introducing the Simplex tool kit, which simplifies the creation of RF2 packages in projects outside the Managed Service;
- Launching a translation section of the Implementation portal that provides the information required to get started with a translation of SNOMED CT;
- webinars tailored for New Zealand stakeholders among the various handson training sessions we offered to different Members and users. These sessions were centered around key topics including the effectiveness of SNOMED CT Expression Constraint Language, health data analytics, and FHIR terminology services;
- Developing and piloting a vendor capability assessment process that vendors can use to assess their maturity across SNOMED CT requirements in five categories (terminology content, record storage, user interface, analytics reporting, and data exchange), providing a powerful advantage for them over vendors that do not provide these capabilities;
- Developing a set of implementation demonstrators and utilities to exemplify and support best-practice implementation techniques. These include:
  - » A postcoordination reference implementation and demonstrator;
  - » A terminology binding utility;
  - A FHIR questionnaire with SNOMED CT binding validator; and
  - » An ICD mapping demonstrator.



View the Advancing SNOMED CT Implementation Series delivered to New Zealand health providers and their vendors



**Explore** our implementation demonstrators and utilities



**Explore** the new areas within the Implementation Support Portal providing details on SNOMED CT translations



**MEMBERS** 

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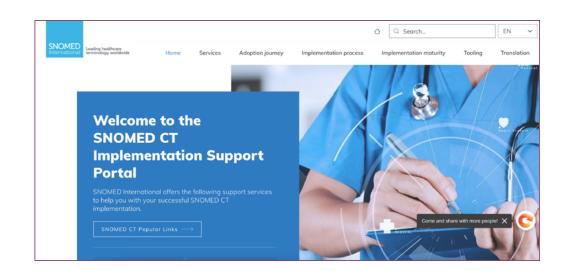


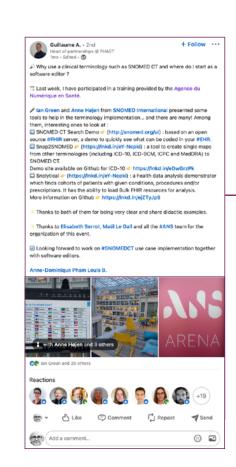
**INNOVATION + ENABLING SUCCESS** 

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### Implementation

- Assisting in creating two new SNOMED CT implementation guides: one specifically concentrating on employing SNOMED CT for documenting Allergy, Intolerance, and Hypersensitivity; and the other on cancer synoptic reporting using SNOMED CT;
- Providing online support through info@snomed.org and hosting online meetings with Members, vendors and hospitals;
- Providing both online and in-person implementation support activities, training sessions and developer days; and
- Developing an implementation dashboard.











### **Engaging with a Global Community**

Every year SNOMED International participates in a number of industry conferences and events around the globe. In 2023, we engaged with stakeholders in multiple ways at the following events:

### The Americas

- Participated in HIMSS 2023 in Chicago, where we presented on Patient
   Empowerment and Health Data
   Interoperability Through SMART Health
   Cards with the VCI Coalition, a collection of public and private organizations committed to empowering individuals with access to verifiable clinical information, including a trustworthy and verifiable copy of their vaccination records in digital or paper form, using open, interoperable standards;
- Attended and participated in E-Health
   Canada 2023, Canada's biggest digital
   health conference, where we engaged
   with Canadian SNOMED CT implementers
   and other industry stakeholders and
   discussed how SNOMED CT works as a
   terminology hub and how it integrates

- other classifications, terminologies and standards;
- Spoke at Revista Salud Digital Latino
   América's Argentina 2023, Claves Para
   la Innovación y la Transformación Digital
   en Salud in Argentina on the topics of
   interoperability, SNOMED CT, and artificial
   intelligence;
- Attended, for the first time, the Pan
   American Health Organization/World
   Health Organization (PAHO/WHO)'s
   first regional vaccine safety meeting in
   Bogota, Colombia, where we shared
   the importance of SNOMED CT for data
   collection, interoperability and analytics,
   and promoted the value and benefits of
   SNOMED CT in health data systems;







# **OVERVIEW MEMBERS** PRODUCTS + SERVICES **ADOPTION INNOVATION + ENABLING SUCCESS GOVERNANCE**

### Engaging with a global community

- Participated in the 2023 LOINC Conference, where we presented at a number of sessions and discussed the LOINC Ontology preview release:
- Supported and participated in Canada's Infoway Partnership Conference, where we discussed with indigenous health leaders how indigenous groups could use SNOMED CT to support better patient care in Canada:
- Hosted a tutorial at HL7 FHIR Dev Days in the US on using SNOMED CT with FHIR;
- Attended the American Medical Informatics Association 2023 Annual Meeting, where we augmented our knowledge of artificial intelligence and of the role of large language models in medicine; and
- Attended the Radiological Society of North America's 2023 Conference in Chicago, supporting our 2023 efforts to update the radiology content in SNOMED CT.

### Europe, Middle East and Africa

- In 2023, we once again attended the annual Arab Health conference, where we shared with delegates the benefits of SNOMED CT and the work and achievements of our four current Middle East Members;
- Attended HIMSS Europe 2023 in Portugal, where we sponsored and participated in a panel session on interoperability and the International Patient Summary;
- Gave a keynote address at the Healthcare 2.0 conference in Dubai, focusing on the International Patient Summary and its impact on public health and population health management. SNOMED International CEO Don Sweete was also awarded the Outstanding Leadership Award at the event;







**MEMBERS** 

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**INNOVATION + ENABLING SUCCESS** 

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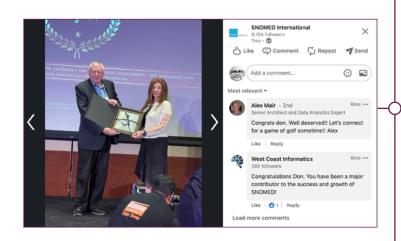
### Engaging with a global community

### Europe, Middle East and Africa continued

- Presented at and supported the combined
   Medical Informatics Europe 2023 / Vitalis
   2023 conference in Sweden, where we shared
   with other European delegates the latest
   SNOMED CT news, including our growing
   contingent of European Union country
   Members and the exciting opportunities
   enabled by the European Health Data Space;
- Attended Bits & Pretzels, Europe's largest eHealth conference for startups in Munich, Germany, where we discovered a plethora of exciting digital health startups and learned where the next generation of industry leaders see the industry moving – a key learning opportunity as we finalize our next five-year strategy;
- Spoke at the La journée française de l'interopérabilité in France as part of eHealth Week Europe 2023, where we discussed the exciting digital health advances that France, which became a SNOMED International Member in 2023, is making;

- Addressed a group of Masters-level health informatics students at Swedish medical university Karolinska Institutet on SNOMED CT and clinical analytics, and provided practical examples of SNOMED CT supporting clinical use case requirements; and
- Spoke at the International Summit on Public Health and Preventive Medicine 2023 on the importance of international collaboration for advancing clinical data interoperability.



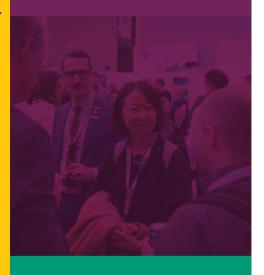




**MEMBERS** 

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### Engaging with a global community

### Asia Pacific

- Connected with government and industry officials, digital health innovators and others at the World Health Organization (online) global conference on digital health in Member country India. The event focused on the need for investment in digital health technologies and the benefits of global collaboration and shared/open solutions. It was also an excellent opportunity to highlight how SNOMED CT supports this Member country's digital healthcare efforts;
- Presented at the China Hospital
  Information Network Conference CHIMA
  2023 in Fuzhou, China, and engaged with
  industry stakeholders to foster SNOMED CT
  education and adoption in the People's
  Republic of China;

- Delivered an online webinar series on SNOMED CT use to stakeholders in New Zealand to support advanced use of data analytics and clinical data interoperability; and
  - Joined a number of panelists at MedInfo 2023 in Australia, where we discussed how SNOMED CT is a powerful enabler of interoperability.









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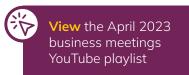
### **Business Meetings**

SNOMED International hosts two sets of business meetings each year – one in April and the other in October, just before our annual Expo. These meetings provide an opportunity for our clinical, project and working groups to meet in person and to provide updates to our governance groups on their work as well as to preview the work ahead. Some of those sessions (such as the welcome address and open General Assembly meetings) are recorded and available on our YouTube channel.













### **SNOMED** International

### **2023 ANNUAL REPORT**

**OVERVIEW MEMBERS** PRODUCTS + SERVICES **ADOPTION** 

**INNOVATION + ENABLING SUCCESS** 

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### **SNOMED CT Expo 2023**

The 2023 Expo program was the most extensive yet, with a full day of pre-conference sessions on the topics dominating conversations in the digital health/health informatics universe, including artificial intelligence, the LOINC Ontology, implementation and clinical data-sharing.

The conference also included a demonstration of the Bahmni open source Electronic Medical Record and SNOMED CT.

### The following numbers tell this year's Expo story:

**76** 

TOTAL NUMBER

OF SESSIONS

16



46.5

40

COUNTRIES

REPRESENTED





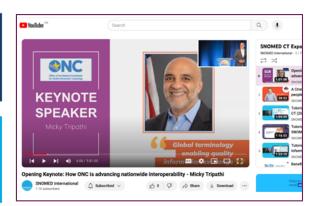




20

ePOSTERS













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### Recognizing Industry Leaders

Each year, as part of our annual Business Meetings and Expo, SNOMED International recognizes peer-nominated individuals who have made a significant impact on the development, implementation and maintenance of SNOMED CT. In 2023, the SNOMED International Lifetime Achievement Awards were given to **Dr Keith E. Campbell**, Program Director, US Food and Drug Administration's Systemic Harmonization and Interoperability Enhancement for Laboratory Data (SHIELD) program; and **Vivian Auld**, Senior Specialist for Health Data Standards (retired).

This year's Awards for Excellence went to **Pim Volkert**, Clinical Data Architecture Coordinator (formerly head of SNOMED NRC Netherlands); and **W. Scott Campbell**, Senior Director of Research Technologies and Director of Pathology and Public Health Informatics, University of Nebraska Medical Center.







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## Expanding our Industry Partnerships

SNOMED International recognizes vendor partners and other health informatics industry participants as key to the organization's – and SNOMED CT users' – long-term success.

In 2023, as part of our ongoing efforts to innovate, we continued to expand our universe of vendor relationships to include more startups, particularly those focused on artificial intelligence and products that support enabling low-resource countries to access SNOMED CT. Some of our key 2023 activities include:

- Completing the work we began in 2022 with the Verifiable Clinical Information coalition, a group of public and private organizations committed to empowering individuals access to a trustworthy and verifiable copy of their vaccination records in digital or paper form using open, interoperable standards, to include SNOMED CT in the SMART Health Cards Framework for digital vaccine certificates;
- Entering into a new working relationship with IQVIA, the Institute for Human Data Science, in which we are looking at public tendering opportunities through a partnership lens to deliver on customer requirements in the health analytics space;
- **Progressing an ongoing project with Apple** to use SNOMED CT in their health tooling applications; and
- Continuing discussions with a number of healthtech incubators, including the Digital Health Hub Foundation, to communicate the value of semantic standardization using SNOMED CT, and provide guidance regarding implementation.





## SNOMED International and the Bahmni Coalition Joint Initiative Reduces Barriers to SNOMED CT Adoption

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## project spotlight

**INNOVATION + ENABLING SUCCESS** 

**GOVERNANCE** 

Collaboration demonstrates how SNOMED International is integrating with other health data standards

In 2023 we completed a two-phase joint initiative with the Bahmni Coalition to develop a SNOMED CT module for integration with Bahmni's open source Electronic Medical Record. Bahmni's application, which is considered a Digital Public Good, is an easyto-use system geared at low-resource settings that combines into a single solution and enhances existing open source products. The module demonstrates how SNOMED CT's standardized clinical terms can be used by open-source EMRs to add structured meaning to clinical information, supporting efficient exchange among healthcare systems. Our partnership with Bahmni also offered us the opportunity to deliver on our humanitarian goals: expanding access to the clinical terminology, reducing the barriers to SNOMED CT adoption and helping governments and

countries better understand how to enhance and evolve their existing digital systems to realize the benefits of SNOMED CT.

It is also a great example of putting into action our commitment to waiving fees for not-for-profit organizations that use SNOMED CT non-commercially for the betterment of people living in rural areas and for resource-constrained countries at the early stages of their digital health transformation.

As well, it demonstrates how we are integrating with other health data standards to simplify reporting to other global organizations such as the World Health Organization and to be a good "global standards citizen."

**OVERVIEW MEMBERS** PRODUCTS + SERVICES **ADOPTION INNOVATION + ENABLING SUCCESS GOVERNANCE** 

## **Clinical Engagement**

SNOMED International-supported stakeholder communities of clinicians, researchers and implementers provide a framework to facilitate discussion among these community members and other stakeholders focused on specific specialties, domains or topic areas, and dialogue between stakeholder communities and SNOMED International. Members of these groups participate in our twice-annual business meetings.

In 2023, we supported 17 clinical, content, technical, research, and implementation communities, including:

- Eight clinical reference (CRG) and two project groups: These groups focus mainly on helping to ensure the content in the clinical terminology and its derivatives in those domains or topic areas is complete and up-to-date. Led by a clinical lead whose role is to also work with the other CRG leads, these groups also support and facilitate the terminology's adoption in clinical settings. They also play a major role in developing documentation such as implementation guides for their domain or topic areas. In 2023, the SNOMED CT Allergy, Hypersensitivity, and Intolerance Clinical Reference Group developed the SNOMED CT Implementation Guide for Allergy, Hypersensitivity, and Intolerance.
- Six advisory groups: Advisory groups influence the ongoing development and maintenance of SNOMED CT in the areas of content, modeling, terminology release, editorial, tooling, e-learning and Managed Service. They contribute to realizing SNOMED International's mandate, adapting quickly as organizational needs evolve.

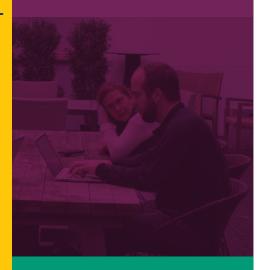




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### Other activities

- In 2023, we worked with clinicians to launch the following new guides:
  - » Practical Guide (with Snowstorm implementation) to Post-Coordination; and
  - » SNOMED CT Implementation Guide for Allergy, Hypersensitivity and Intolerance

### SNOMED CT Web Series

Throughout the year, we offer free-to-attend clinical, research and implementation webinars. Hosted by clinicians, distinguished researchers, representatives from the SNOMED CT community and SNOMED International staff members, the webinars provide an opportunity for participants to learn about real-world experiences with the terminology.







## SNOMED International Debuts its First Regional Clinical Network

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## project spotlight

**INNOVATION + ENABLING SUCCESS** 

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The Latin American regional clinical network is the first in a series of planned networks

In 2023, SNOMED International conducted a pilot project with the goal of enabling non-English speaking clinicians in Member countries and clinicians in non-SNOMED International Member countries to learn about and engage with SNOMED CT.

The initiative builds on the organization's current Clinical Reference Groups, which focus on specific clinical specialties such as anesthesia or eye care.

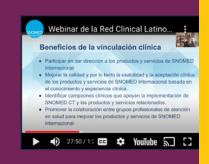
The pilot project kicked off with the formation and inaugural virtual meeting of the Latin American Network (Red Clinica Latinoamericana in Spanish).

Representing six different Spanish-speaking countries, 60 people attended the webinar moderated by SNOMED International surgical terminologist Victor Medina and co-hosted by Senior Implementation Specialist Alejandro Osornio López. With a presentation from Dr Alejandro Mauro, Digital Clinical Transformation Lead at Clínica Alemana in Santiago, Chile, the session outlined the key features and functions of SNOMED CT, its structure, the benefits it enables and its role in driving improved patient care delivery globally. Dr Mauro was also the SNOMED International 2022 Award for Excellence recipient.

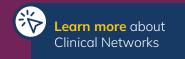
The Latin American Network is the first in a series of planned SNOMED International clinical regional networks around the globe, which are expected to be formed in the Asia Pacific, Europe, Africa, and the Middle East. Clinical input into the development of SNOMED CT is key to ensuring that the terminology is quality assured from a clinical standpoint, and meets current and future clinical needs and requirements.

Groups will meet online for 90 minutes once each quarter, but the goal is to keep the conversation going between meetings by creating a space for each group as it is formed where participants can initiate discussion threads, ask questions, and comment on posts.

A dedicated clinical engagement team will also support local clinical collaboration by creating opportunities for clinicians to discuss relevant topics and to engage with representatives from National Release Centres in Member countries. Those in non-Member countries can also approach SNOMED International staff to request more information about the benefits of SNOMED CT and the various options for accessing the clinical terminology.









## **OVERVIEW MEMBERS** PRODUCTS + SERVICES **ADOPTION INNOVATION + ENABLING SUCCESS GOVERNANCE**

## Education

SNOMED International offers a range of SNOMED CT-focused courses, certifications, educational materials and related documents via the SNOMED International e-learning platform. We also partner with other education providers around the globe and participate in activities such as guest lecturing at universities.

Number of	3828	322	105
graduates	Foundation Course	Authoring Level 1	Authoring Level 1
since inception	(English)	Course	Certification
456 Curso de Fundamentos (Spanish)	766 Implementation Course	48 Authoring Level 2 Course	107  Terminology Services  Certification Course +  Exam

**(7**!

"I enjoyed the level of depth in the terminology architecture covered in this foundational course. It has sparked my interest to pursue a more advanced course herein.

The videos were well created with visualizations and demos to enhance the learning experience."

"Really intuitive course well supported by the theory on the presentation enforced with the practical exercises. Great mentorship of the instructors."



"Very very very practical...
real life experience with real
life problems. The teachers
are simply great!"



## **OVERVIEW MEMBERS** PRODUCTS + SERVICES **ADOPTION INNOVATION + ENABLING SUCCESS GOVERNANCE**

### Education

#### 2023 Highlights

- Launched a new (and free) SNOMED CT for Translators e-Learning
   Pathway, which provides the basics of the clinical terminology to support users throughout their translation journey;
- **Developed** a new **SNOMED CT Education Resources Guide**, which provides an overview of the educational materials available (an e-learning account is required to access this content);
- **Completed** and launched three to five modules of a new implementation course, with plans to launch it in 2024;
- Updated the SNOMED CT Starter Tutorial, a self-paced course that provides an overview of the basics of SNOMED CT and is a prerequisite for many other SNOMED CT courses; and
- **Updated** the Spanish language Curso de Fundamentos de SNOMED CT (Foundations of SNOMED CT) course.



"Fascinating content, good mix of clinical content and data management without going too deep into medical or technical sides."





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GOVERNANCE

# innovation + enabling SUCCESS

Embracing innovation enables
SNOMED International to develop new
and innovative products and services,
driving greater value for our Members
and other stakeholders

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## **2023 Innovation Highlights**

#### Artificial Intelligence (AI) Symposium

As SNOMED International closes out its 2020-2025 strategy and develops the strategy for the next five years, it is clear that AI will occupy an increasingly greater role for the organization. To better understand how we can harness this advanced technology to reimagine and improve our internal processes as an organization, the role of clinical terminologies such as SNOMED CT in the development of safe, accurate and reliable AI models, and how we can engage with AI to drive the future development, maintenance and delivery of SNOMED CT and related products and services, we hosted a two-hour symposium on the topic as one of four SNOMED CT Expo 2023 pre-conference sessions. The symposium, which featured a panel of public and private sector industry experts, examined the growing role of artificial intelligence in medicine in general and in the health data standards world more specifically. It also touched on the enormous opportunities AI poses for patients as well as the challenges it poses for global healthcare systems to drive those opportunities. Over the next year, SNOMED International, in conjunction with Members and other stakeholders, will continue to research and hone our approach to this exciting advanced technology.







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#### **Entity Linking Challenge**

In late 2023, SNOMED International issued a call to participate in the Entity Linking Challenge in collaboration with UK-based artificial intelligence firm Veratai, as well as with PhysioNet (the Research Resource for Complex Physiologic Signals), which offers free access to large collections of physiological and clinical data and related open-source software to support biomedical research and education; and DrivenData, which runs online machine learning competitions with social impact and works directly with missiondriven organizations to drive change through data science and engineering.

The goal of the Entity Linking Challenge is to engage our community in an effort to advance the development of efficient and reliable tools for automating the coding of patient data, facilitating interoperability and decision support, and, ultimately, improving healthcare delivery. As part of the challenge, participants will train models based on real-world doctors' notes that have been deidentified and annotated with SNOMED CT concepts by medically trained professionals.

#### **Bahmni Coalition**

As part of our work with the Bahmni Coalition to develop a SNOMED CT module for integration with Bahmni's open source Electronic Medical Record, we created a lightweight version of Snowstorm, the SNOMED CT terminology server developed by SNOMED International with a focus on performance and enterprise scalability. The version we created as part of the project is a lightweight terminology server for low resource settings intended for use in low-resource and middle-income countries.







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## **Enabling Success**

The SNOMED International operations ecosystem includes the Finance and Corporate Services, Communications, Human Resource and Technical Services functions, each of which performs distinct but complementary roles that support the ever-evolving SNOMED CT stakeholder and product and services landscape.

Our **Finance and Corporate Services** function ensures we manage risk in line with industry gold standards. The team supports and manages all governance interactions with our Members and oversees the reporting of the organization's strategy and operations.

#### 2023 highlights include:

- **Overseeing** the organization's financial health and annual budget process, as well as a 2022 Year Audit with clean results;
- Managing the rollout of the revised Affiliate License and Articles of Association;
- Supporting all governance meetings; and
- Supporting the nominations process for the 2023 SNOMED International Lifetime Achievement Award and Award of Excellence, as well as for Advisory Group members.



Listen to the inaugural SNOMED International podcast with hematologist Dr. Charles Gutteridge, clinical advisor to SNOMED International and Chief Clinical Information Officer at Barts Health NHS Trust in London; and Rory Davidson, SNOMED International's Chief Information Officer, on the topic of interoperability



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GOVERNANCE

### Enabling success

The **Communications** function manages all internal and external communications and supports and promotes awareness of the organization's offerings and activities by working closely with external organizations and stakeholders in alignment with SNOMED International's overall approach to collaboration. In 2023, key activities included:

- **Planning and executing** the 2023 Communications strategy;
- Launching a redesigned snomed.org
   website:
- Launching a podcast pilot;
- Developing, distributing and promoting 14 news releases and four blogs;
- **Supporting** global industry event participation;
- **Supporting** clinical, research and project group activities and webinars; and
- **Deploying** content and strategies to increase our social media presence and engagement with stakeholders.

Key activities for **Human Resources**, in addition to the role's routine responsibilities, included:

- Ensuring leadership succession plans are up-to-date, and starting to work with second in commands to look at their respective development paths as they relate to succession;
- Supporting staff professional development activities;
- Continuing to engage with staff and assessing and managing staff satisfaction; and
- Managing the annual staff retreat, where staff get the opportunity to engage with each other and build stronger team relationships.

The **Technical Services** function not only "keeps the lights on," but maintains the organization's technology infrastructure. In 2023, key activities included:

- **Ensuring** monthly delivery of the SNOMED CT International Edition as well as all derivative product releases and Managed Service deliveries;
- Supporting internal technical requirements for the Quality Initiative, implementation and training activities and clinical reference and project group webinars;
- Providing the operational infrastructure and technology services for the organization to function;
- Continuing to develop, test and enhance all of the tools in the SNOMED International estate including the authoring platform, content request system, MLDS, refset and translation tooling and the Snowstorm terminology server; and
- **Supporting** stakeholders groups such as translation and specialist domain groups and others to submit content to their community content extensions.

THESE FUNCTIONS PLAY AN ESSENTIAL ROLE IN SUPPORTING THE SUCCESSFUL EXECUTION OF THE ORGANIZATION'S FIVE-YEAR STRATEGY.



**MEMBERS** 

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GOVERNANCE



# governance

SNOMED International Members are national government agencies or other bodies that have been deemed suitable for the role by their respective national government. Their responsibilities and authority include appropriately establishing, monitoring, promoting or regulating concept-based systems of clinical terminology for that territory or country. The organization is governed by a General Assembly, its highest authority, a Member Forum, which acts as an advisory body, and a Management Board, which has legal and oversight responsibility for the management and direction of SNOMED International.

**OVERVIEW** 

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GOVERNANCE

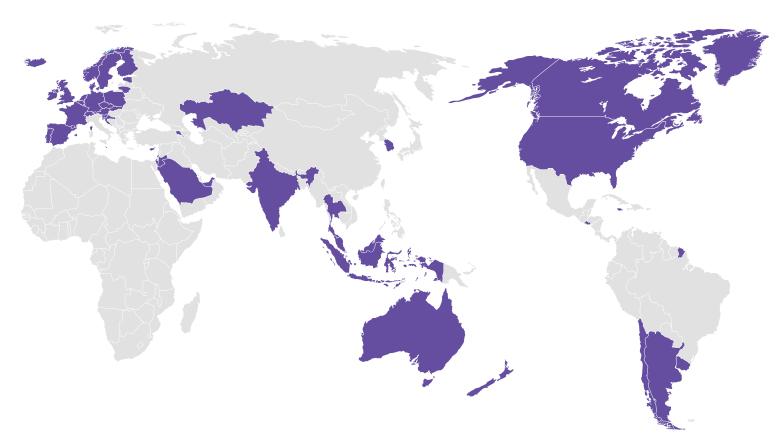


#### **General Assembly**

The General Assembly ensures that the purpose, objects and principles of the Association are pursued and that the interests of the organization are safeguarded.

#### Member Forum

The Member Forum optimizes collaboration and coordination among Member countries. It is co-chaired by an elected representative of the Member Forum and by a representative from SNOMED International.





governance bodies

The designations employed and the presentations of the material on this map do not imply the expression of any opinion whatsoever on the part of IHTSDO trading as SNOMED International concerning the legal status of any country, territory, city or area or of its authorities or concerning the delimitation of its frontier or boundaries. The depiction and use of boundaries, geographic names and related data shown on the map are not warranted to be error-free, nor do they imply official endorsement or acceptance by IHTSDO trading as SNOMED International or its Member organizations. Further, Member organizations are not occountable for any data presented on this map.



#### GENERAL ASSEMBLY AND MEMBER FORUM REPRESENTATIVES AS OF DECEMBER 31, 2023

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**MEMBERS** 

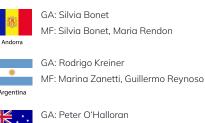
PRODUCTS + SERVICES

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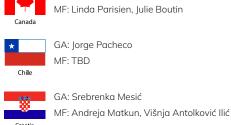
**GOVERNANCE** 





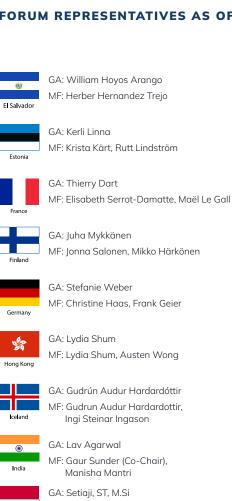


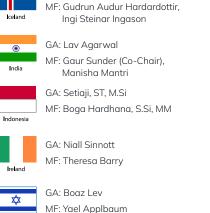






MF: Camilla Wiberg Danielsen, Louise Bie





MF: Michele Roofe, Taleva Girvan

GA: Michele Roofe



GA: Cátia Sousa Pinto

GA: Byeon Nam Soo

MF: Filipe Mealha, Sara Russo

MF: Park Hyeoun-Ae, Hwang Hee



United States

of America

MF: Patrick McLaughlin, Nick McGraw

MF: Rossana Occhiuzzi, Betania Arispe

GA: Maria Pía González

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## **Management Board**

The Management Board has legal and oversight responsibility for the management and direction of SNOMED International. The terms of the appointments are staggered: the longest is three years; the shortest, one year. Terms are subject to a maximum service of six years in total. Management Board appointments are non-executive director positions which carry legal responsibility for the governance of the organization.

In 2023, SNOMED International welcomed Management Board members Anne-Marie Grey, Principal Director at New York-based Grey-O'Keefe Consulting LLC; and Bersabel Ephrem, Director General, Public Health of Canada.





#### 2023 MANAGEMENT BOARD MEMBERS



**Joanne Burns** (Appointed in 2017)



Bersabel Ephrem (Appointed February 2023)



Mengchun Gong (Appointed April 2017)



Anne-Marie Grey (Appointed February 2023)



Michael Lewis (Appointed October 2020, Term





Andrew Roddam (Appointed October 2020)



Isabelle de Zegher (Appointed October 2020)

# OVERVIEW MEMBERS PRODUCTS + SERVICES

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FINANCIALS



## Financial Snapshot

The 2023 financial year end was closed out with a clean auditors report supported by robust internal controls, policies and procedures which are reviewed and updated as the organization evolves.

#### SNOMED INTERNATIONAL INCOME AND EXPENDITURE REPORT (USD)

	2023	2022
Income	13,195,098	14,101,170
Cost of sales	(9,408,837)	(8,716,204)
Gross surplus	3,786,261	5,384,966
Administrative expenses	(4,396,436)	(3,636,640)
Operating (deficit)/surplus	(610,175)	1,748,326
Interest receivable and similar income	374,365	120,637
(Deficit)/Surplus on ordinary activities before taxation	(235,810)	1,868,963
Taxation	(234,162)	0
(Deficit)/Surplus for the financial year	(469,972)	1,868,963

The financial information presented within this document does not comprise the statutory accounts of International Health Terminology Standards Development Organisation for the financial years ended 31 December 2023 and 31 December 2022 but represents extracts from them. These extracts do not provide in full, an understanding of the financial performance and position, or financial and investing activities, of the company as the complete Financial Statements.

The statutory accounts for those years have been reported on by the company's auditor and delivered to the registrar of Companies House. The reports of the auditor were (i) unqualified, (ii) did not include a reference to any matters to which the auditor drew attention by way of emphasis without qualifying their report, and (iii) did not contain a statement under section 498 (2) or (3) of the Companies Act 2006.

The Financial Statements, including the auditor's report, can be obtained free of charge on request to the company at One Kingdom Street, Paddington Central, London W2 6BD or by email to invoices@snomed.org

linkedin.com/company/ihtsdo







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## snomed.org

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