

# **SNOMED International Global Patient Set (GPS) package Implementation Guide - September 2021**

<b>Date</b>	<b>20210930</b>
<b>Document Version</b>	<b>1.0</b>
<b>Release Status</b>	<b>PRODUCTION</b>

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## 1. Introduction

SNOMED International has introduced the Global Patient Set (GPS) to support the sharing of patient health information coded with SNOMED CT® without the need for a SNOMED CT Affiliate license. The GPS is a managed list of existing SNOMED CT unique identifiers, fully specified names (FSN), preferred terms in international English, and status flags, made available at no cost to users. The GPS supports health information interoperability across care settings, systems, organizations and national borders.

This GPS Implementation Guide provides information on downloading the GPS and considerations for its use.

## 2. GPS License

The GPS (specifically the set of materials included in the GPS tab-separated values file) is produced by SNOMED International under the terms of the Creative Commons Attribution 4.0 International Public License, <https://creativecommons.org/licenses/by/4.0/>.

Additional information about this license specific to SNOMED International's release of the GPS:

- SNOMED CT is © and ® SNOMED International. The right to maintain the GPS remains vested exclusively in SNOMED International.
- The Licensee can redistribute the GPS.
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### 3. Contents of the GPS

The GPS contains the content of a number of SNOMED CT reference sets to support a variety of general purposes and is intended to be released annually. The file contains a concept's:

- Unique identifier (id)
- Status flag (active - 1 or inactive - 0)
- Fully specified name (FSN)
- The preferred term (PT) in International English

The scope of the GPS contains concepts from SNOMED CT refsets to support the following domains and potential uses:

- General dentistry diagnoses - this includes dentistry diagnoses terms commonly used in the Electronic Dentistry Record (EDR).
- Dentistry Odontogram - terms to describe a patient's Odontogram in the EDR.
- International Patient Summary <sup>[1]</sup> - terms to support the content of an International Patient Summary based on HL7 and EU requirements and usage.
- Family/General practice health issues and reasons for encounter - a set of health issues/reasons for encounter, developed in conjunction with World Organization of Family Doctors (WONCA), based on data captured in a number of countries.
- Renal disorders - this set supports the cause of death reporting to the Renal Registry which is developed and managed by the European Renal Association - European Dialysis and Transplant Association (ERA-EDTA).
- Nursing activities - this list of Nursing Activities, agreed through the SNOMED CT Nursing Clinical Reference Group, includes content aligned with International Classification of Nursing Practice (ICNP) plus content added based on usage requirements.
- Nursing health issues - this list of Nursing Activities, agreed through the SNOMED CT Nursing Clinical Reference Group, includes content aligned with ICNP plus content added based on usage requirements.
- DICOM - Digital Imaging and Communications in Medicine (DICOM). This represents the set of SNOMED CT concepts that DICOM use in their various standards which are implemented in digital imaging systems globally.
- IHE Clinical Profiles - this represents the SNOMED CT content defined by Integrating the Health Enterprise (IHE) clinical groups for use in IHE profiles covering the following clinical areas - Cardiology, Eyecare, Pathology and Laboratory Medicine, Patient Care Coordination (including Antepartum, Labour and delivery and Maternal discharge) and Quality, Research and Public Health (including Birth and Fetal Death reporting, Health weight, Vital signs and Death reporting). The full list of 36 IHE profiles included is available on request at [gps@snomed.org](mailto:gps@snomed.org).
- COVID-19: In March 2020, the World Health Organization formally characterized Coronavirus, COVID-19, as a global pandemic and health systems globally continue their efforts to manage the outbreak. COVID-19 content included in the January 2020 release and subsequently updated in March 2020 outside of SNOMED CT's customary release cycle, has been added to the scope of the September 2020 GPS to support the recording and sharing healthcare data during the COVID-19 pandemic. Existing and relevant SNOMED CT content has also been added to the GPS and can be referenced at covid-19.



As part of each release, the GPS will be updated to reflect changes to the underlying terminology, including concept inactivations and additions.

## What the GPS does not contain

- As a whole, the GPS is not a clinically curated list
- The GPS does not include SNOMED CT relationships, attributes, hierarchies and historical versioning that are fundamental to the nature of the ontology and its ability to enable clinical data analytics, decision support, etc. The complete set of concept synonyms and definitions are not part of the GPS.

If you would like to obtain the full version of SNOMED CT through membership or an Affiliate License, please visit the SNOMED International website .

**EXAMPLE:** The following representation shows the relationships, attributes and synonyms for myocardial infarction in SNOMED CT:



Parents

- Ischemic heart disease (disorder)
- Myocardial disease (disorder)
- Myocardial necrosis (finding)
- Necrosis of anatomical site (disorder)

Myocardial infarction (disorder) ☆

SCTID: 22298006

22298006 | Myocardial infarction (disorder) |

- en Myocardial infarction
- en MI - myocardial infarction
- en Myocardial infarction (disorder)
- en Cardiac infarction
- en Heart attack
- en Infarction of heart
- en Myocardial infarct

Associated morphology → Infarct

Finding site → Myocardium structure

Children (12)

- Acute myocardial infarction (disorder)
- First myocardial infarction (disorder)
- Microinfarct of heart (disorder)
- Mixed myocardial ischemia and infarction (disorder)
- Myocardial infarction in recovery phase (disorder)
- Myocardial infarction with complication (disorder)
- Non-Q wave myocardial infarction (disorder)
- Old myocardial infarction (disorder)
- Postoperative myocardial infarction (disorder)
- Silent myocardial infarction (disorder)
- Subsequent myocardial infarction (disorder)
- True posterior myocardial infarction (disorder)

The equivalent representation for myocardial infarction in the GPS is featured below:

id	fsn	pt	active
22298006	Myocardial infarction (disorder)	Myocardial infarction	1

## 4. Obtaining the GPS

The GPS is downloadable from the GPS page on the SNOMED International website.

- SNOMED International generates and updates the GPS once a year and is the only official distributor of the GPS.
- In order to ensure those downloading the file can be notified for subsequent updates, as well as to acknowledge the terms of the license, users are requested to provide the following information:
  - Name
  - Organization or Company affiliation
  - Email address
  - Intended use and applicable industry
  - General Data Protection Regulation acknowledgement and permission for further contact
  - *Note: No password is required*
- The current version of the GPS will be made available for download in TSV (Tab Separated Values) file format.
- SNOMED International will notify registered contacts when a new version of the GPS is available.

## 5. Translating the GPS

For clinical safety reasons, SNOMED International strongly recommends that implementers do not translate the terms in the GPS based on GPS content alone. Refer to SNOMED International translation guidance for more information. For implementers considering translation, you are recommended to contact SNOMED International to take advantage of resources and existing translations.

- SNOMED International asks that implementers interested in undertaking translation notify SNOMED International. Please contact SNOMED International for details of existing GPS translations.
- SNOMED International requests that implementers producing translations provide them back to SNOMED International for potential redistribution by contacting [gps@snomed.org](mailto:gps@snomed.org). SNOMED International leverages objects, such as translated materials, to support education and knowledge sharing across a global community avoiding duplication and interoperability consequences.
- SNOMED International does not assure any translation of the GPS unless explicitly stated.
- Contact [gps@snomed.org](mailto:gps@snomed.org) with all translation inquiries and requests.

## 6. Implementation Considerations

The GPS does not contain the full SNOMED CT terminology and therefore implementers need to consider how they are going to incorporate the GPS into their applications and systems.

- Without the SNOMED CT taxonomy and a clinically curated set of concepts, implementers will need to consider how to code patient data with the correct information.
- As the GPS is not a clinically curated set of concepts, SNOMED International cannot guarantee that all key clinically relevant content is part of the GPS.
- If an implementer currently has a SNOMED CT Affiliate license and is sharing data with organizations without an Affiliate License (but who are using the GPS), any patient-related data encoded with SNOMED identifiers that are not in GPS should be shared using the preferred term as free text, instead of using an identifier.
- If you would like to obtain the full version of SNOMED CT through membership or an Affiliate License, please visit the SNOMED International website .

## 7. GPS Implementation Scenarios (Use Cases)

The GPS does not contain the full SNOMED CT terminology (e.g. relationships, attributes, hierarchies and historical versioning.) As a result, implementers need to consider how they plan to incorporate the GPS into their applications and systems. This guide references three types of fictional scenarios as illustrative examples of the use of the SNOMED GPS.

For select scenarios, each word or phrase in [square parentheses] presents examples of relevant words and phrases representing SNOMED CT concepts included in the GPS. For example, in the phrase, 'The hospital pre-admissions team books Paulo for a [pre-surgery assessment] and a [CT scan]', [pre-surgery assessment] and [CT scan] represent Concept IDs in the GPS. These concepts can be used in software applications (e.g. an electronic health record) and databases to ensure consistent understanding by other clinicians. The consistent use of SNOMED CT concept identifiers included in the GPS allows for insight into the health of individuals and populations, as well as the ability to measure the efficacy and outcomes of health service delivery.

*DISCLAIMER: All persons and events depicted throughout the GPS scenarios are fictional. Any resemblance to actual persons, living or dead, or actual events is purely coincidental.*

### Scenario #1: Clinical - Hip Replacement and Discharge to Home Care

*This health journey illustrates the use of GPS concepts in the planning and provisioning of a patient's care as they transition from an organization with a SNOMED International license and one that does not.*

This is the journey of Paulo, a retired, 72 year old man living in a non-Member country. Paulo is a [smoker], has [type 2 diabetes], lives alone. He has a long-standing problem with [hip pain], due to [osteoarthritis], limiting his regular activities. His general practitioner (GP) orders an X-Ray and refers Paulo to an Orthopedic surgeon suspecting a [hip replacement] may be required.

The GP generates his referral using GPS since the university hospital has a SNOMED CT affiliate license - thus promoting interoperability and clear communication. The radiologist generates a radiology report using DICOM related SNOMED CT concepts included in the GPS. The report is transmitted electronically back to the GP's EMR. The GP uses the GPS to look up the codes they've received.

The Orthopedic surgeon reviews Paulo's X Ray information. Upon completion of his assessment, he recommends [hip replacement surgery]. The Surgeon books Paulo for a [pre-surgery assessment] and an [CT scan].

Paulo goes to the hospital for his pre-assessment. The nurse and anesthetist use the hospital's Electronic Health Record (EHR) to review Paulo's medical history, and current medications, all SNOMED CT coded. The anesthetist orders Paulo's [blood tests] and the nurse conducts a [physical examination] to assess if Paulo is healthy enough to undergo the surgery.

All observations are recorded in the hospital's EHR using SNOMED CT concept identifiers. These identifiers will be in the electronic hospital discharge summary that will be provided to Paulo's GP, as well as to nursing staff and other allied health workers that provide services to him. Where a concept identifier of an observation is not in the GPS, the local language preferred term is used instead of the SNOMED CT identifier.

Paulo's hip replacement surgery is routine and he recovers well. The SNOMED CT concept ids for the surgical procedure, outcomes, and prognosis are recorded in the EHR, and will be part of his discharge summary to his GP.

The university hospital [consults with the community home care services]. The integrated care team work together on the [Development of a care plan] that is to be used by all the care providers. The care plan [identifies the expectations of home care], providing information about Paulo's acute care episode and the subsequent agreed course of postoperative rehabilitation and treatment. A discharge nurse informs Paulo of what to expect in the coming weeks, explains the physical activities permitted and what is to be avoided. Paulo is discharged to a [community service] for 6 weeks with [prescriptions] for [pain], inflammation, and [low molecular weight heparin] as his type II diabetes places him at high risk for a [deep venous thrombosis]. His integrated care plan includes referrals to a physiotherapist and a nutritionist.

The SNOMED concepts included in the care plan are those supported in the GPS. Where a concept identifier of something in the care plan is not in the GPS, the local language preferred term is used instead of the SNOMED CT identifier.

The home care nurse, physiotherapist and nutritionist review Paulo's care plan using an integrated EHR application which is not SNOMED CT enabled but refers to GPS content and free text. The care plan is followed and information shared between the professionals as progress on Paolo's recovery moves forward. 3 months later the team agree that the goals set out and agreed with Paolo have been achieved and he can be discharged and returned to the care of his GP. A discharge summary is created.

## Scenario #2: Enhancing Care through Digital Health Capability - Breast Cancer Treatment in a Low- or Middle-Income Country (LMIC)

*This health journey illustrates the use of GPS concepts in the diagnosis and treatment of breast cancer in a low to middle income country that is in the process of maturing its digital health systems. No health care facilities within this scenario are SNOMED CT enabled. The GPS has provided an opportunity for a LMIC to start the process of understanding the use and benefits of standardizing clinical language across health care facilities.*

This is the journey of 'Malillo, a woman living in the African nation of Lesotho who, at the age of 34, has been diagnosed with [intra-ductal breast cancer]. Advanced cancer diagnostics and treatment are unavailable in Lesotho, and instead are provided by transporting patients to neighbouring South Africa.

'Malillo initially discovers a [lump in her left breast] that concerns her. She quickly reports it to her Village Health Worker. He agrees with her concern and advises her to go to the local community clinic and have it checked. 'Malillo attends the community clinic, where the nurse creates a [referral to the district hospital] for [biopsy of breast]. Recently, a national initiative has introduced electronic referrals using HL7 messages, containing GPS concepts, as a step towards creating a digital health

environment. Tested locally, the clinic nurse uses this to create the referral and send it via a mobile app. Where a concept is not available in the GPS, the local clinical language is used instead.

Following the [biopsy of breast] at the district hospital, which is documented in 'Malillo's health record, 'Malillo receives her confirmed diagnosis of [intra-ductal carcinoma of the breast]. The results are then transmitted electronically to her community clinic and by SMS to 'Malillo's mobile phone.

The district hospital nurse offers [counseling] to 'Malillo about the 'likely' difficult journey that she might undergo in treating her breast cancer. The nurse prepares 'Malillo for [referral to the breast clinic] at the Queen Mamohato Memorial Hospital (QMMH) in Maseru and includes relevant health record information for their use. In Maseru, the Oncologist assesses 'Malillo and makes a [referral for further care] to the oncology department at Bloemfontein in South Africa for further specialized treatment, including [chemotherapy] and [radiation therapy]. This, once again, uses the new electronic referral system which supports using codes from the GPS. The Oncologist shares all relevant health record information as part of the referral, using SNOMED CT codes in GPS within the message.

Bloemfontein is equipped with a GPS-enabled electronic record. Bloemfontein is exploring how SNOMED CT might benefit this hospital in light of recent discussions at a national level. Where a concept is not available in the GPS, the local clinical language is used instead. As well as providing a standardized language to record care, using the GPS encourages clinicians involved in 'Malillo's care use the same words for the same diagnoses, treatments and results. Further, Bloemfontein's systems store SNOMED CT identifiers which are unique; eliminating duplication, supporting accurate retrieval and allowing consistent meaning over time.

Once in Bloemfontein, 'Malillo undergoes a [lumpectomy of breast] which is captured in her health record. A six-month [development of care plan] is prepared for her including [chemotherapy] and a three-month course of [radiation therapy] and recorded as part of her health record. As a result of anti-cancer drug therapy, 'Malillo enters [premature menopause]. This was explained to her as a possible side effect of her cancer treatments.

The aggressive treatment in South Africa proves to be successful. Upon discharge from Bloemfontein, a detailed summary of her care is provided back to 'Malillo's district hospital, created from the GPS enabled health record.

### Scenario #3: Global Interoperability with GPS

*This scenario presents the example of an international humanitarian organization that delivers impartial medical care to people affected by conflict, epidemics, disasters, or exclusion from health care and their use of the GPS.*

As health crises take place in SNOMED International non-Member countries, the International Patient Summary (IPS), part of the scope of the GPS, can support summary patient information gathering. In such situations, up to date patient information recording will not be undertaken and therefore, gathering of information on a summary level is more likely. The IPS is a minimal and non-exhaustive Patient Summary, speciality-agnostic, condition-independent, but readily usable by all clinicians for unscheduled patient care.

Coding patient data with SNOMED CT concepts included in the GPS at this point of emergency care will enable information to be added to a patient's existing electronic records as well as supporting statistical analysis of the health outcomes of the event and the care provided as a whole.

For example, when undergoing initial triage due to conflict, epidemics, or disasters, patient summary records coded with SNOMED CT concepts included in the GPS, can then be provided to relevant local care providers, agencies etc. Further, in SNOMED International non-Member countries, the GPS can support structured clinical information sharing across primary, acute, community and homecare settings to benefit a patient's journey to health and well-being.

## Scenario #4: Other Contexts

The license being used for the SNOMED International GPS also allows for the use of GPS content in other artefacts including:

### Source Code:

- Any source code can include content from the GPS, or the whole GPS, (including SNOMED CT identifiers, fully specified names and preferred terms) without requiring permission, as long as there is the necessary attribution per the creative commons license.
- Specifications:
- Specifications and other standards (such as HL7 FHIR, OpenEHR archetypes, and IHE profiles) can include content from the GPS, or the whole GPS, (including SNOMED CT identifiers, fully specified names and preferred terms) free for use in documentation, source code and interface specifications as long as there is the necessary attribution per the creative commons license.
- Research & Development:
- When working on research papers or any other research and development activities, content from the GPS, or the whole GPS, (including SNOMED CT identifiers, fully specified names and preferred terms) can be freely used without requiring permission, as long as there is the necessary attribution per the creative commons license. Where specific content is not available in the GPS, please contact [gps@snomed.org](mailto:gps@snomed.org).

### Websites:

- For informational websites (such as Wikipedia, health care-related patient sites or educational sites), content from GPS, or the whole GPS can be used freely without any permission, as long as there is the necessary attribution per the creative commons license.



## 8. Maintenance and Updating Considerations

- Updates to the GPS are intended to be released annually.
  - Changes to the GPS will typically represent the inactivation of SNOMED concepts and additions to the GPS as SNOMED International deems necessary.
  - SNOMED International will not consider direct change requests to the GPS. Changes to the GPS are triggered by updates to in-scope SNOMED International reference sets listed in section three.
- Updates will have a new version number and be available from the GPS page on the SNOMED International website.
- Registered users will be notified via email when changes are made to the GPS.

## **9. Additional Resources & Contact Information**

Additional Information on the GPS is located on the SNOMED International website along with frequently asked questions (FAQs.)

All GPS inquiries can be directed to [gps@snomed.org](mailto:gps@snomed.org).

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<sup>[1]</sup> [http://international-patient-summary.net/mediawiki/index.php?title=Main\\_Page](http://international-patient-summary.net/mediawiki/index.php?title=Main_Page)