

# Common Data Architecture for Life Sciences™ CDA.LS.HCP Kernel Overview

Version 25.10 – November 13, 2025 Owner: Arno Sosna

#### Overview

In the Life Sciences industry, a Healthcare Professional (HCP) is broadly defined as a person involved in the delivery or administration of healthcare services related to a medicine, medical device, medical diagnostic, or therapy. This encompasses not only individuals with professional healthcare training, such as physicians, nurses, and pharmacists, but also those in administrative, managerial, and support roles within healthcare organizations (HCOs), including office managers and administrative staff. HCP data is used for a wide variety of research and development, and commercial purposes.

The HCP kernel defines a standard nomenclature and format for the storage and exchange of HCP data. It describes the most common entities, attributes, and picklist items related to healthcare professionals, collectively referred to as components. Like all kernels, the HCP kernel is intentionally small and describes only the most common components.

## **Entities**

The HCP kernel consists of the following entities.

Label	Name	Description
НСР	hcp	Information about a Healthcare Professional (HCP), broadly defined as an individual who plays a role in the development, testing, manufacturing, or commercialization of life science products, or in the delivery and administration of healthcare services related to these products.
Segment	segment	A grouping of HCPs based on shared characteristics, behaviors, preferences, or needs. Typically used to tailor marketing, sales, and support efforts more effectively, by acknowledging that different groups may require different approaches or products.
HCP Segment	hcp_segment	Represents the relationship between an HCP and a Segment.
Address	address	Location information associated with an HCP.

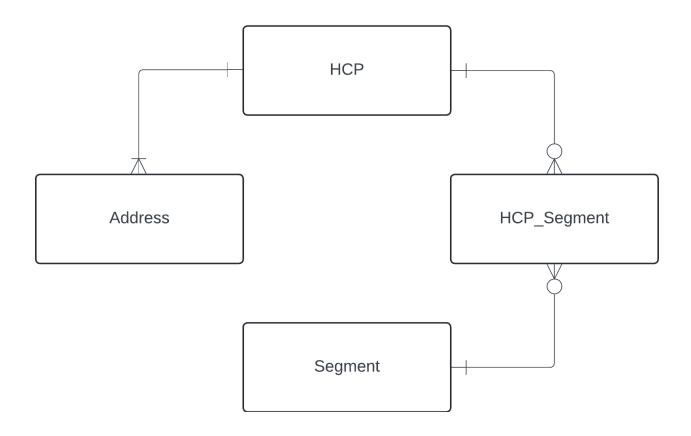
## **Entity Relationships**

In practice, HCPs are often related to instances of other entities. For example, an HCP may be affiliated with multiple healthcare organizations (HCOs).

Within the context of the HCP kernel, relationships and their cardinalities are shown in the following table.

Relationship	Cardinality	Notes
HCP to Address	1:1 to 1:N	An HCP always has one or more addresses, and no address can exist without a related HCP. If an HCP has one or more addresses, exactly one is defined as the primary address. This is the purpose of the <b>primary</b> attribute in the HCP Address entity definition.
HCP to HCP Segment	1:1 to 0:N	An HCP can be related to any number of HCP Segment relationships, but an HCP Segment relationship can only be related to one HCP.
Segment to HCP Segment	1:1 to 0:N	A Segment can be related to any number of HCP Segment relationships, but an HCP Segment relationship can only be related to one Segment.

These relationships can be represented visually by the following entity relationship diagram.



# **HCP Attributes**

The  $\ensuremath{\mathbf{HCP}}$  entity consists of the following attributes.

Entity	Label	Name	Data Type
hcp	Veeva ID	veevaid	Text 25
hcp	First Name	first_name	Text 50
hcp	Last Name	last_name	Text 80
hcp	Middle Name	middle_name	Text 50
hcp	Prefix	prefix	Text 20
hcp	Suffix	suffix	Text 10
hcp	Language	language	Picklist (Restricted)
hcp	Year of Birth	year_of_birth	Number 4
hcp	Age Range	age_range	Picklist (Restricted)
hcp	Email	email	Text 128
hcp	Mobile Phone	mobile_phone	Text 40
hcp	Office Phone	office_phone	Text 40

hcp	Fax	fax	Text 40
hcp	Country	country	Picklist (Restricted)
hcp	State	state	Picklist (Restricted)
hcp	City	city	Text 40
hcp	Postal Code	postal_code	Text 20
hcp	HCP Type	hcp_type	Picklist (Unrestricted)
hcp	National Healthcare ID	nhid	Text 40
hcp	Specialty	spec_1	Picklist (Restricted)
hcp	All Specialties	all_spec	Multivalue Picklist (Restricted)
hcp	Specialty Group	spec_group_1	Picklist (Restricted)
hcp	All Specialty Groups	all_spec_group	Multivalue Picklist (Restricted)
hcp	Prescriber	prescriber	Boolean
hcp	Clinical Researcher	clin_researcher	Picklist (Restricted)
hcp	Medical Degree	degree_1	Picklist (Unrestricted)
hcp	All Medical Degrees	all_degree	Multivalue Picklist (Unrestricted)
hcp	Level	level	Picklist (Restricted)
hcp	Adopter Type	adopter_type	Picklist (Restricted)
hcp	Key Opinion Leader	kol	Boolean
hcp	Investigator	investigator	Boolean
hcp	Speaker	speaker	Boolean
hcp	Target	target	Boolean
hcp	Status	status	Picklist (Restricted)

# **Segment Attributes**

The **Segment** entity consists of the following attributes.

Entity	Label	Name	Data Type
segment	Name	segment_name	Text 50
segment	Source	source	Text 50

# **HCP Segment Attributes**

# The **HCP Segment** entity consists of the following attributes.

Entity	Label	Name	Data Type
hcp_segment	НСР	hcp	Entity (HCP)
hcp_segment	Segment	segment	Entity (Segment)

## **HCP Address Attributes**

The **HCP Address** entity consists of the following attributes.

Entity	Label	Name	Data Type
address	НСР	parent	Entity (HCP)
address	Primary	primary	Boolean
address	Street Address 1	street_address_1	Text 128
address	Street Address 2	street_address_2	Text 100
address	Country	country	Picklist (Restricted)
address	State	state	Picklist (Restricted)
address	City	city	Text 40
address	Postal Code	postal_code	Text 20
address	Latitude	latitude	Number 15
address	Longitude	longitude	Number 15
address	Phone	phone	Text 40
address	Fax	fax	Text 40
address	Home	home	Boolean
address	Business	business	Boolean
address	Billing	billing	Boolean
address	Shipping	shipping	Boolean
address	Sample Shipping	sample_shipping	Boolean
address	Status	status	Picklist (Restricted)

# **HCP Primary Language Picklist Items**

The HCP **Primary Language** picklist consists of the following items based on names from the <u>ISO 639 standard</u> for language classification. This list is a subset of the ISO 639 language codes.

Label	Name
Albanian	sq
Amharic	am
Arabic	ar
Azerbaijani	az
Belarusian	be
Bengali	bn
Bosnian	bs
Bulgarian	bg
Burmese	my
Catalan	ca
Chinese	zh
Croatian	hr
Czech	cs
Danish	da
Dutch	nl
English	en
Estonian	et
Finnish	fi
French	fr
Georgian	ka
German	de
Greek	el
Hebrew	he
Hindi	hi
Hungarian	hu
Icelandic	is
Irish	ga

Italian	it
Japanese	ja
Kannada	kn
Kazakh	kk
Korean	ko
Latvian	lv
Lithuanian	It
Macedonian	mk
Malay	ms
Malayalam	ml
Mongolian	mn
Nepali	ne
Norwegian	no
Oromo	om
Pashto	ps
Persian	fa
Polish	pl
Portuguese	pt
Punjabi	ра
Romanian	ro
Russian	ru
Serbian	sr
Slovak	sk
Slovenian	sl
Spanish	es
Swahili	sw
Swedish	sv
Tagalog	tl
Tamil	ta
Thai	th
Turkish	tr

Ukrainian	uk
Urdu	ur
Uzbek	uz
Vietnamese	vi
Yoruba	yo

# **HCP Age Range Picklist Items**

The HCP Age Range picklist consists of the following items.

Label	Name	Description
18-24	1824	18 to 24
25-29	2529	25 to 29
30-34	3034	30 to 34
35-39	3539	35 to 39
40-44	4044	40 to 44
45-49	4549	45 to 49
50-54	5054	50 to 54
55-59	5559	55 to 59
60+	60p	60 plus

# **HCP Primary Country Picklist Items**

See Country Picklist Items below.

# **HCP Primary State Picklist Items**

See State Picklist Items below.

# **HCP Type Picklist Items**

The HCP **Type** picklist consists of the following items.

Label	Name	Description
Office Staff	staf	Manages organizational tasks and processes, and makes decisions to support the operations of healthcare organizations. Not normally directly involved in patient care or executive-level decision-making.
Pharmacist	phar	Analyzes, formulates, dispenses, and advises on medications.
Executive	exec	Involved in high-level decision-making and strategic management within healthcare organizations. This role encompasses leadership responsibilities and directing overall organizational strategies. Not normally directly involved in patient care.
Nurse	nurs	Performs patient care, technical procedures, and administrative tasks. Normally holds a nursing degree.  Does not regularly prescribe medicine. Includes nurse practitioners.
Physician	phys	Provides general and specialized medical treatment to patients. Normally holds an MD (Doctor of Medicine) or DO (Doctor of Osteopathic Medicine) degree.
Caregiver	care	Provides care on a paid basis but does not hold the most advanced medical degrees. Includes dentists, physician assistants, emergency medical technicians, physical therapists, psychologists, dental assistants, opticians, veterinarians, and other allied health professionals.
Researcher	rsch	Conducts scientific studies or analyzes data to advance healthcare knowledge, typically in laboratories, universities, or research institutions.
Other	othr	A healthcare professional who does not fit into one of the above categories.

# **HCP Specialty Picklist Items**

The HCP **Primary Specialty** and HCP **All Specialties** picklists consist of the following items. Each specialty belongs to a specialty group. See *HCP Specialty to Specialty Group Mapping* below.

Label	Name		Specialty Group Mapping
Abdominal Surgery	suab	Diagnosis and surgical treatment of abdominal conditions. Includes visceral surgery.	su

Addiction Medicine	am	Diagnosis, treatment, and prevention of addiction. Includes Addiction Psychology & Counseling.	am
Addiction Psychiatry	ampy	Diagnosis and treatment of drug, alcohol, and other substance-related disorders with psychotherapy and prescriptions.	am
Administrative Medicine	ad	Management and administration in a healthcare organization.	ad
Advanced Heart Failure	cdhf	Treatment of heart failure patients with persistent symptoms despite previous therapies.	cd
Allergy	iyal	Diagnosis and treatment of allergies. Also known as Allergology.	iy
Alternative Medicine	al	Non-conventional treatment of conditions. Includes Acupuncture, Homeopathy, Oriental Medicine, and Naturopathic Medicine.	al
Anesthesiology	ae	Management of consciousness, pain control, and muscle relaxation during medical procedures.	ae
Angiology	iman	Diagnosis, treatment, and prevention of diseases of the arteries, veins, and lymph system. Includes Phlebology and Vascular Medicine.	im
Cardiac Electrophysiology	cdep	Diagnosis, treatment, and management of disorders of the heart's electrical system.  Also known as Clinical Cardiac Electrophysiology.	cd
Cardiology	cd	Diagnosis, treatment, and prevention of disorders of the cardiovascular system. Including Congenital Heart Diseases.	cd
Cardiothoracic Surgery	suct	Surgical treatment of diseases affecting organs within the thorax, including the heart, lungs, and esophagus. Includes Congenital Cardiac Surgery. Also known as Cardiothoracic Surgery.	su
Colorectal Surgery	sucr	Surgical treatment of the rectum, anus, and colon. Also known as Proctology.	su
Dentistry	dt	Diagnosis, treatment, and prevention of diseases and conditions of the oral cavity. Includes Orthodontics, Periodontics, Endodontics, Prosthodontics, and Aesthetic Dentistry.	dt

sudm	Surgical treatment of specific types of high- risk and complex skin cancers. Also known as Micrographic Dermatologic Surgery.	su
dm	Diagnosis and treatment of benign and malignant disorders of the skin, hair, nails, and adjacent mucous membranes. Includes Dermatopathology.	dm
eddm	Diagnosis, treatment, and prevention of Diabetes Mellitus. Also known as Diabetology.	ed
em	Treatment of acute illnesses or injuries requiring immediate attention.	em
ed	Diagnosis and treatment of hormone-related diseases and conditions.	ed
imen	Diagnosis, treatment, and prevention of diseases by procedures conducted inside the patient's body using direct visualization.	im
gpfm	Diagnosis, treatment, and prevention for all family members across all ages, genders, diseases, and parts of the body. Includes Family Practice.	gp
ge	Diagnosis, treatment, and prevention of diseases of the digestive system, including stomach, intestines, liver, gallbladder, biliary tree, and pancreas.	ge
gp	Diagnosis, treatment, and prevention of common and chronic diseases in children and adults. Includes General Medicine.	gp
gn	Diagnosis, management, and counseling of patients with, or at risk of, hereditary disorders. Includes Medical and Clinical Genetics.	gn
grpy	Diagnosis, treatment, and prevention of mental disorders in elderly patients.	gr
gr	Diagnosis, treatment, and prevention of physical, mental, and social health issues with respect to elderly patients. Includes Gerontology.	gr
ongy	Diagnosis, treatment, and prevention of cancers of the female reproductive tract.	on
	dm eddm em ed imen gpfm ge gp	risk and complex skin cancers. Also known as Micrographic Dermatologic Surgery.  Diagnosis and treatment of benign and malignant disorders of the skin, hair, nails, and adjacent mucous membranes. Includes Dermatopathology.  Diagnosis, treatment, and prevention of Diabetes Mellitus. Also known as eddm Diabetology.  Treatment of acute illnesses or injuries requiring immediate attention.  Diagnosis and treatment of hormone-related diseases and conditions.  Diagnosis, treatment, and prevention of diseases by procedures conducted inside the patient's body using direct visualization.  Diagnosis, treatment, and prevention for all family members across all ages, genders, diseases, and parts of the body. Includes Family Practice.  Diagnosis, treatment, and prevention of diseases of the digestive system, including stomach, intestines, liver, gallbladder, biliary tree, and pancreas.  Diagnosis, treatment, and prevention of common and chronic diseases in children and adults. Includes General Medicine.  Diagnosis, management, and counseling of patients with, or at risk of, hereditary disorders. Includes Medical and Clinical Genetics.  Diagnosis, treatment, and prevention of mental disorders in elderly patients.  Diagnosis, treatment, and prevention of physical, mental, and social health issues with respect to elderly patients. Includes Gerontology.  Diagnosis, treatment, and prevention of

Gynecology	ду	Diagnosis, treatment, and prevention of diseases and conditions of the female reproductive system. Includes surgical treatment and Uro-Gynecology. Also known as Women's health.	gy
Hand Surgery	suhn	Surgical treatment of hand disorders.	su
Hematology	hm	Diagnosis and treatment of diseases of the blood and blood-forming organs. Excludes cancers. Includes Transfusion Medicine.	hm
Hematology Oncology	onhm	Diagnosis and treatment of blood cancers.	on
Hepatology	gehp	Diagnosis, treatment, and prevention of diseases of the hepatic system including liver, gallbladder, biliary tree, and pancreas.	ge
Hospital Medicine	gphm	Management of acutely ill patients through the continuum of hospital care.	gp
Immunology	iy	Clinical and laboratory care of patients with diseases due to disordered immunity.	iy
Infectious Diseases	id	Diagnosis, treatment, and prevention of infections, including bacterial, viral, fungal, and parasitic infections. Includes Sexually Transmitted Diseases, also known as Venereology, such as HIV Medicine.	id
Intensive Care Medicine	imic	Diagnosis and treatment of life-threatening conditions that may require life support and monitoring. Also known as Critical Care Medicine.	im
Internal Medicine	im	Diagnosis, non-surgical treatment, and prevention of diseases from internal organs in adult patients. Includes Adult Health.	im
Interventional Cardiology	cdic	Interventional diagnosis and treatment of cardiovascular diseases using catheters.	cd
Laboratory Medicine	ptlm	Diagnosis and prevention of diseases via laboratory analysis.	pt
Legal Medicine	adlg	Study and application of scientific and medical knowledge to legal problems. Also known as Medical Jurisprudence.	ad
Maxillofacial Surgery	sumx	Surgical treatment of diseases, injuries, and defects of the face, oral cavity, head, neck, and jaws.	su
Microbiology	idmb	Identification of microorganisms for the diagnosis and treatment of infectious diseases. Includes Virology, Bacteriology, and Parasitology.	id

Midwifery	gymy	Care for childbearing women, newborn infants, and families before, during, and shortly after pregnancy.	gy
Nephrology	np	Diagnosis and treatment of kidney diseases. Includes Dialysis.	np
Neurology	ny	Diagnosis and treatment of conditions affecting the nervous system. Includes Stroke Medicine, Brain Injury Medicine, and Vascular Neurology.	ny
Neuromuscular Medicine	nyno	Diagnosis and treatment of abnormalities and diseases of the motor neurons, nerve roots, peripheral nerves, neuromuscular junction, and muscles.	ny
Neurophysiology	nypg	Diagnosis and treatment via measurement and assessment of the neuro system's function. Also known as Clinical Neurophysiology.	ny
Neurosurgery	suny	Diagnosis and surgical treatment of diseases of the nervous system.	su
Nuclear Medicine	rynm	Diagnosis and treatment of diseases via application of radioactive substances. Includes Nuclear Radiology.	ry
Nursing	nu	General autonomous and collaborative care for patients.	nu
Nutrition	gpnt	Diagnosis, treatment, and prevention of conditions related to food intake.	gp
Obesity Medicine	edob	Treatment and prevention of Obesity. Also known as Bariatric Medicine.	ed
Obstetrics	gyos	Care of women during pregnancy and childbirth and the diagnosis and treatment of diseases of the female reproductive organs.	gy
Occupational Medicine	gpoc	Prevention and treatment of work-related injuries and illnesses.	gp
Oncology	on	Diagnosis, treatment, and prevention of cancers using systemic therapy, including chemotherapy, hormone therapy, and biological agents. Includes Medical Oncology and Clinical Oncology.	on
Ophthalmology	oh	Diagnosis and treatment of eye disorders. Includes Orthoptics.	oh
Optometry	ohop	Diagnosis and non-surgical treatment of vision defects.	oh

Orthopedic Surgery	suop	Diagnosis and surgical treatment of disorders of the musculoskeletal system, including muscles, bones, joints, ligaments, and tendons. Includes Orthopedic and Trauma Surgery, Foot & Ankle Surgery, and Orthopedic Sports Surgery.	su
Otolaryngology	ot	Diagnosis and treatment, including surgical treatment of diseases of the ear, nose, throat, and related parts of the head and neck. Includes Otology and Neurotology. Also known as Ear Nose Throat and Otorhinolaryngology.	ot
Pain Medicine	pn	Diagnosis and treatment of acute or chronic pain.	pn
Palliative Medicine	pv	Care of patients with severe and incurable conditions. Includes Hospice Medicine.	pv
Pathology	pt	Diagnosis and assessment through knowledge gained by laboratory analyses of specimens, tissue organs, or organisms. Includes Anatomic/Clinical Pathology and Neuropathology.	pt
Pediatric Cardiology	pdcd	Diagnosis and treatment of children with heart diseases.	pd
Pediatric Dentistry	pddt	Diagnosis, treatment, and prevention of oral health in children.	pd
Pediatric Endocrinology	pded	Diagnosis and treatment of children with diseases of the endocrine system.	pd
Pediatric Gastroenterology	pdge	Diagnosis, treatment, and prevention of diseases of the digestive system in children, including stomach, intestines, liver, gallbladder, biliary tree, and pancreas. Includes Pediatric Hepatology.	pd
Pediatric Neurology	pdny	Diagnosis and treatment of children with diseases related to the nervous system.	pd
Pediatric Oncology	pdon	Diagnosis and treatment of cancer in children. Includes Pediatric Hematology-Oncology.	pd
Pediatric Psychiatry	pdpy	Diagnosis and treatment of mental disorders in children, including biological, social, and psychological aspects of behavioral, emotional, and developmental disorders.  Also known as Child and Adolescent Psychiatry.	pd

Pediatric Pulmonology	pdpl	Diagnosis and treatment of children with diseases related to the lungs.	pd
Pediatric Surgery	pdsu	Surgical treatment of diseases in children. Includes Pediatric Surgical Oncology, Pediatric Neurosurgery und Pediatric Cardiothoracic Surgery.	pd
Pediatrics	pd	Diagnosis, treatment, and prevention of physical, mental, and social health of newborns, infants, children, and adolescents.	pd
Perinatology	gypi	Diagnosis, treatment, and prevention of diseases of mother and child before and after birth. Includes Perinatal Medicine, Neonatal-Perinatal Medicine, and Maternal & Fetal Medicine.	gy
Pharmacology	ph	Study of medications and other substances and their efficacy and safety, including toxic effects of natural and artificial substances. Includes Clinical Pharmacology and Toxicology.	ph
Pharmacy Specialty	рс	Formulation, dispensing, clinical application, management, and commercialization of medication. Includes Community Pharmacy and Hospital Pharmacy.	рс
Physical Therapy	rmps	Physical treatment and prevention. Includes Chiropractic Medicine and Massage Therapy. Also known as Physiotherapy.	rm
Plastic Surgery	supl	Repair, reconstruction, or replacement of physical defects of form or function. Includes Cosmetic Surgery.	su
Podiatry	supo	Diagnosis and treatment of disorders of the feet.	su
Preventive Medicine	pm	Promotion of the absence of disease. Includes Hygiene.	pm
Psychiatry	ру	Diagnosis, treatment, and prevention of mental, emotional, and behavioral disorders. Includes Neuropsychiatry.	ру
Psychology	рурд	Diagnosis, treatment, and counseling of mental disorders. Includes Clinical Psychology, Mental Health Counselor, and Marriage & Family Therapy.	ру
Psychosomatic Medicine	pypm	Diagnosis and treatment in the relation between mental and physical illness. Also known as Consultation-Liaison Psychiatry.	ру

pmph	Protecting the safety and improving the health of communities through education, policy making, and research for disease and injury prevention. Includes Epidemiology, Community Medicine, and Social Work.	pm
pl	Diagnosis and treatment of diseases of the respiratory system. Includes Respiratory Care Therapy.	pl
ryon	Treatment of cancers using radiation therapy. Includes Therapeutic Radiology.	ry
ry	Diagnosis and treatment including interventional radiology or guidance of the treatment of injuries and diseases using medical imaging. Includes Diagnostic Radiology and Vascular & Interventional Radiology, and Nuclear Cardiology.	ry
rm	Enhancement and restoration of functional ability for physical impairments or disabilities.	rm
rp	Diagnosis, treatment, and prevention of reproductive issues, including fertility treatment. Includes Reproductive Health and Andrology.	rp
rd	Design and development of new diagnostics and therapies for patients via bench research and translational medicine. Includes Chemistry, Biochemistry, Biology, Biotechnology, Biomedicine, Physics, and related.	rd
rh	Diagnosis and treatment of immune- mediated diseases, especially of the musculoskeletal system.	rh
nysm	Diagnosis, treatment, and prevention of sleep disorders and disturbances.	ny
rmsc	Diagnosis, treatment, and rehabilitation of injuries to the spinal cord.	rm
susp	Diagnosis, treatment, prevention, and rehabilitation of conditions and injuries related to sports or physical activity.	su
su	Surgical treatment of diseases of the whole patient. Also known as General Surgery.	su
suon	Surgical treatment of tumors.	su
	ry rm rp rd rh nysm rmsc susp	health of communities through education, policy making, and research for disease and injury prevention. Includes Epidemiology, Community Medicine, and Social Work.  Diagnosis and treatment of diseases of the respiratory system. Includes Respiratory Care Therapy.  Treatment of cancers using radiation therapy. Includes Therapeutic Radiology.  Diagnosis and treatment including interventional radiology or guidance of the treatment of injuries and diseases using medical imaging. Includes Diagnostic Radiology and Vascular & Interventional ry Radiology, and Nuclear Cardiology.  Enhancement and restoration of functional ability for physical impairments or disabilities.  Diagnosis, treatment, and prevention of reproductive issues, including fertility treatment. Includes Reproductive Health and Andrology.  Design and development of new diagnostics and therapies for patients via bench research and translational medicine. Includes Chemistry, Biochemistry, Biology, Biotechnology, Biomedicine, Physics, and related.  Diagnosis and treatment of immunemediated diseases, especially of the musculoskeletal system.  Diagnosis, treatment, and prevention of sleep disorders and disturbances.  Diagnosis, treatment, and rehabilitation of injuries to the spinal cord.  Diagnosis, treatment, prevention, and rehabilitation of conditions and injuries related to sports or physical activity.  Surgical treatment of diseases of the whole patient. Also known as General Surgery.

Tropical Medicine	idtm	Diagnosis, treatment, and prevention of diseases prevalent in, or unique to, tropical and subtropical regions. Includes Travel Medicine.	id
Urgent Care Medicine	emuc	Emergency diagnosis and treatment for non- severe acute conditions. Includes Acute Care.	em
Urology	ur	Diagnosis and treatment of the urinary tract including kidneys, ureters, bladder, urethra, adrenal glands, as well as the male reproductive tract.	ur
Vascular Surgery	suvs	Diagnosis and surgical treatment of diseases of the arterial, venous, and lymphatic systems.	su
Veterinary	vt	Diagnosis and treatment of medical conditions in animals.	vt
Other	or	Specialty is known but does not fit into one of the above categories.	or
Unknown	un	Specialty is unknown or not applicable.	un

# **HCP Specialty Group Picklist Items**

The HCP **Primary Specialty Group** and HCP **All Specialty Groups** picklists consist of the following items. Each specialty belongs to a specialty group. See *HCP Specialty to Specialty Group Mapping* below.

Label	Name	Description
Addiction Medicine	am	Diagnosis, treatment, and prevention of addiction. Includes Addiction Psychology & Counseling.
Administrative Medicine	ad	Management and administration in a healthcare organization.
Alternative Medicine	al	Non-conventional treatment of conditions. Includes Acupuncture, Homeopathy, Oriental Medicine, and Naturopathic Medicine.
Anesthesiology	ae	Management of consciousness, pain control, and muscle relaxation during medical procedures.
Cardiology	cd	Diagnosis, treatment, and prevention of disorders of the cardiovascular system. Including Congenital Heart Diseases.

Dentistry	dt	Diagnosis, treatment, and prevention of diseases and conditions of the oral cavity. Includes Orthodontics, Periodontics, Endodontics, Prosthodontics, and Aesthetic Dentistry.
Dermatology	dm	Diagnosis and treatment of benign and malignant disorders of the skin, hair, nails, and adjacent mucous membranes. Includes Dermatopathology.
Emergency Medicine	em	Treatment of acute illnesses or injuries requiring immediate attention.
Endocrinology	ed	Diagnosis and treatment of hormone-related diseases and conditions.
Gastroenterology	ge	Diagnosis, treatment, and prevention of diseases of the digestive system, including stomach, intestines, liver, gallbladder, biliary tree, and pancreas.
General Practice	gp	Diagnosis, treatment, and prevention of common and chronic diseases in children and adults. Includes General Medicine.
Genetics	gn	Diagnosis, management, and counseling of patients with, or at risk of, hereditary disorders. Includes Medical and Clinical Genetics.
Geriatrics	gr	Diagnosis, treatment, and prevention of physical, mental, and social health issues with respect to elderly patients. Includes Gerontology.
Gynecology	gy	Diagnosis, treatment, and prevention of diseases and conditions of the female reproductive system. Includes surgical treatment and Uro-Gynecology. Also known as Women's health.
Hematology	hm	Diagnosis and treatment of diseases of the blood and blood-forming organs. Excludes cancers. Includes Transfusion Medicine.
Immunology	iy	Clinical and laboratory care of patients with diseases due to disordered immunity.
Infectious Diseases	id	Diagnosis, treatment, and prevention of infections, including bacterial, viral, fungal, and parasitic infections. Includes Sexually Transmitted Diseases, also known as Venereology, such as HIV Medicine.
Internal Medicine	im	Diagnosis, non-surgical treatment, and prevention of diseases from internal organs in adult patients. Includes Adult Health.
Nephrology	np	Diagnosis and treatment of kidney diseases. Includes Dialysis.

Neurology	ny	Diagnosis and treatment of conditions affecting the nervous system. Includes Stroke Medicine, Brain Injury Medicine, and Vascular Neurology.
Nursing	nu	General autonomous and collaborative care for patients.
Oncology	on	Diagnosis, treatment, and prevention of cancers using systemic therapy, including chemotherapy, hormone therapy, and biological agents. Includes Medical Oncology and Clinical Oncology.
Ophthalmology	oh	Diagnosis and treatment of eye disorders. Includes Orthoptics.
Otolaryngology	ot	Diagnosis and treatment, including surgical treatment of diseases of the ear, nose, throat, and related parts of the head and neck. Includes Otology and Neurotology. Also known as Ear Nose Throat and Otorhinolaryngology.
Pain Medicine	pn	Diagnosis and treatment of acute or chronic pain.
Palliative Medicine	pv	Care of patients with severe and incurable conditions. Includes Hospice Medicine.
Pathology	pt	Diagnosis and assessment through knowledge gained by laboratory analyses of specimens, tissue organs, or organisms. Includes Anatomic/Clinical Pathology and Neuropathology.
Pediatrics	pd	Diagnosis, treatment, and prevention of physical, mental, and social health of newborns, infants, children, and adolescents.
Pharmacology	ph	Study of medications and other substances and their efficacy and safety, including toxic effects of natural and artificial substances. Includes Clinical Pharmacology and Toxicology.
Pharmacy Specialty	рс	Formulation, dispensing, clinical application, management, and commercialization of medication. Includes Community Pharmacy and Hospital Pharmacy.
Preventive Medicine	pm	Promotion of the absence of disease. Includes Hygiene.
Psychiatry	ру	Diagnosis, treatment, and prevention of mental, emotional, and behavioral disorders. Includes Neuropsychiatry.
Pulmonology	pl	Diagnosis and treatment of diseases of the respiratory system. Includes Respiratory Care Therapy.
Radiology	ry	Diagnosis and treatment including interventional radiology or guidance of the treatment of injuries and diseases using medical imaging. Includes Diagnostic Radiology and Vascular & Interventional Radiology, and Nuclear Cardiology.

Rehabilitation Medicine	rm	Enhancement and restoration of functional ability for physical impairments or disabilities.
Reproductive Medicine	rp	Diagnosis, treatment, and prevention of reproductive issues, including fertility treatment. Includes Reproductive Health and Andrology.
Research and Development	rd	Design and development of new diagnostics and therapies for patients via bench research and translational medicine. Includes Chemistry, Biochemistry, Biology, Biotechnology, Biomedicine, Physics, and related.
Rheumatology	rh	Diagnosis and treatment of immune-mediated diseases, especially of the musculoskeletal system.
Surgery	su	Surgical treatment of diseases of the whole patient. Also known as General Surgery.
Urology	ur	Diagnosis and treatment of the urinary tract including kidneys, ureters, bladder, urethra, adrenal glands, as well as the male reproductive tract.
Veterinary	vt	Diagnosis and treatment of medical conditions in animals.
Other	or	Specialty is known but does not fit into one of the above categories.
Unknown	un	Specialty is unknown or not applicable.

# **HCP Specialty to Specialty Group Mapping**

Each Specialty item maps to a Specialty Group item. This mapping can be determined from the first two characters of each Specialty item's name. For example, the Radiation Oncology (ryon) speciality maps to the Radiology (ry) specialty group.

## **HCP Clinical Researcher Picklist Items**

The HCP Clinical Researcher picklists consist of the following items.

Label	Name	Description
Yes	yes	Has been identified as a clinical researcher.
No	no	Has been identified as not a clinical researcher.

## **HCP Medical Degree Picklist Items**

The HCP **Primary Medical Degree** and HCP **All Medical Degrees** picklists consist of the following items.

Label	Name	Description
MD	md	Doctor of Medicine
DO	do	Doctor of Osteopathic Medicine
Nurse	nu	Ranges from diploma and associate degrees to bachelor, master, and doctor of Nursing degrees
Advanced Practice Nurse	nuap	Includes Certified Nurse Practitioners (CNP), Clinical Nurse Specialists (CNS), Certified Registered Nurse Anesthetists (CRNA), and Certified Nurse-Midwives (CNM)
Physician Assistant	ра	Master of Science in Physician Assistant Studies
PharmD	phmd	Doctor of Pharmacy (pharmaciae doctor) including pharmacists with diplomas and accredited pharmacists
DMD	dmd	Doctor of Dental Medicine
DVM	dvm	Doctor of Veterinary Medicine
PhD	phd	Doctor of Philosophy (philosophiae doctor)
Master of Medicine	mscm	Postgraduate medical degree for advanced clinical skills and specialization.
Bachelor of Medicine	bscm	Undergraduate medical degree qualifying graduates to practice as doctors.
Technician	th	Technical degree, often but not always from vocational training, including assistant degrees.

## **HCP Status Picklist Items**

The HCP **Status** picklist consists of the following items.

Label	Name	Description
Active	act	Actively practicing as a healthcare professional.
Inactive	iact	Not actively practicing as a healthcare professional.

## **HCP Level Picklist Items**

The HCP **Level** picklist consists of the following items.

Label
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Level 1	1	Limited engagement with the company and minimal impact on its business objectives.
Level 2	2	Engage occasionally with the company, influencing only a small scope of business activities.
Level 3	3	Interact with the company regularly and contribute to business outcomes.
Level 4	4	Significantly involved with the company, having a major impact on business strategies and results. Personalized promotions are typically not sent to HCPs at this level.
Level 5	5	Critical to the company's success and require dedicated management effort, including a single relationship owner, to maintain and enhance the relationship. Personalized promotions are typically not sent to HCPs at this level.

# **HCP Adopter Type Picklist Items**

The HCP **Adopter Type** picklist consists of the following items.

Label	Name	Description
Innovator	inno	Innovators are the first to adopt new medical innovations. They are willing to take risks and are often seen as pioneers in their field. Innovators are crucial for the initial introduction and testing of new concepts or technologies in healthcare.
Early	earl	Early adopters are quick to embrace new innovations after seeing their initial success or potential. They usually have a high degree of opinion leadership within the medical community and their endorsement helps new ideas to gain further acceptance.
Middle	midd	The middle majority who adopt new innovations once they have been proven and accepted by Innovators and Early adopters. They rely on evidence and assurance that the innovation is beneficial and practical before integrating it into their practice.
Late	late	Late adopters are cautious and skeptical about new innovations and will only adopt them after a significant portion of their peers have done so. They need substantial evidence and peer pressure, and may only adopt due to necessity or external pressures.

# **HCP Address Country Picklist Items**

See Country Picklist Items below.

#### **HCP Address State Picklist Items**

See State Picklist Items below.

#### **HCP Address Status Picklist Items**

The HCP Address **Status** picklist consists of the following items.

Label	Name	Description
Active	act	Currently in use as an address.
Inactive	iact	Not currently in use as an address.

## **Country Picklist Items**

The HCP **Primary Country** picklist attribute and the HCP Address **Country** picklist attribute consist of picklist items based on <u>ISO 3166-1 standard country codes and names</u>. For the full list of items, see the Country Items worksheet in the HCP Kernel spreadsheet.

#### State Picklist Items

The HCP **Primary State** picklist attribute and the HCP Address **State** picklist attribute consists of picklist items based on <u>ISO 3166-2</u> codes for identifying the principal subdivisions (e.g., provinces or states) of all countries coded in <u>ISO 3166-1</u>. For the full list of items, see the State Items worksheet in the HCP Kernel spreadsheet.

#### Internationalization

It is up to application developers and data providers to choose how to handle support for different languages and locales.

## **Change Management**

CDA kernels are treated as a Data API, with a specific support and deprecation policy similar to developer APIs:

- The names of components will not change after they are published.
- Component labels and descriptions may change to provide clarity or correct errors.

- New components may be added in any new version.
- Components can be deprecated annually at the start of a calendar year, initiating a 3-year notice period. After this period, deprecated components will be removed.

## **Change History**

As new versions of the HCP kernel are released, a summary of changes is included here.

## Version 25.02

- 1. Changed label values for 3 State Items (Chhattisgarh [in-cg], Jammu and Kashmir [in-jk], Chandigarh [in-ch]) to remove special characters.
- 2. Removed 24 State Items to be consistent with the ISO 3166-2 subdivision codes. For details of these codes please contact us.
- 3. Added 136 State Items that were removed from the 24.10 version in error. For details of these codes please contact us.
- 4. Change the label for the Country Item with name gb from *Great Britain* to *United Kingdom* for consistency with ISO 3166-1 standard.

#### Version 24.10

- Removed 593 historical State items, added 440 missing State items, and made 311
  label changes to ensure HCP kernel State items match the latest ISO 3166-2 subdivision
  codes and names. For the full State items change log from version 24.8 please contact
  us.
- 6. Changed country item label **Svalbard**, **Jan Mayen** to Svalbard and Jan Mayen to match its ISO 3166-1 country name.
- 7. Changed language label **Filipino** to **Tagalog** to match ISO 639 language name.
- 8. Removed the "**Primary**" prefix from the following attribute labels: Primary Language, Primary Email, Primary Country, Primary State, Primary City, Primary Postal Code, Primary Specialty, Primary Specialty Group, Primary Medical Degree.

#### Version 24.8

- 1. Added **clin\_researcher** attribute to indicate whether an HCP has been identified as a clinical researcher.
- Added rsch HCP Type picklist item to categorize HCPs as researchers, indicating that they conduct scientific studies or analyze data to advance healthcare knowledge, typically in laboratories, universities, or research institutions.
- 3. Changed description of **staff** HCP Type picklist item to reduce ambiguity with the **exec** item.
- Changed description of exec HCP Type picklist item to reduce ambiguity with the staff item.

- 5. Changed description of **nurs** HCP Type picklist item to add inclusion of nurse practitioners.
- 6. Changed description of **care** HCP Type picklist item to remove the inclusion of nurse practitioners.
- 7. Removed backslash character in the label for the **onhm** Specialty picklist item for clarity and consistency with other items.
- 8. Added **or** Speciality and Specialty Group picklist items for cases where specialty is known but does not fit into one of the defined categories.
- 9. Added **un** Speciality and Specialty Group picklist items for cases where specialty is either not known or not applicable.
- 10. Fixed typo in **spec\_1** attribute label: "Primary Speciality" corrected to "Primary Specialty".

#### Version 0.3

- Added qualifier on Picklist and Multivalue Picklist attributes to explicitly indicate whether implementations should allow items to be added and edited (Unrestricted) or prevent items from being added and edited (Restricted).
- 2. Added descriptions for Age Range Items.

## Version 0.2

- 1. All entity, attribute, and picklist item names have changed to lowercase. For example, **HCP** has changed to **hcp**, **US-CA** has changed to **us-ca**, etc.
- 2. HCP **prefix** attribute data type increased from Text 10 to Text 20.
- 3. Address **latitude** and **longitude** attribute data types changed from Text 15 to Number 15.
- 4. segment entity added with **name** and **source** attributes.
- 5.
- 6. **source** and **name** attributes removed from hcp\_segment entity.**segment** attribute added to hcp\_segment entity.
- 7. Address **hcp** attribute renamed to **parent** with updated description.
- 8. Added "This picklist is meant to be non-extensible." text to attribute notes for all picklist attributes that are mean to be non-extensible (i.e. customers and end-users of software products that implement the HCP kernel should not be able to add new values to these picklists).
- 9. Corrected Language picklist item name for Estonian from **ee** to **et**.
- 10. Added Technician (th) to Medical Degree Items.
- 11. Corrected spelling of "Midwives" in Medical Degree Items.
- 12. Added missing State item, **qa-sh**.
- 13. Corrected State item name it-sd to it-su.
- 14. Added missing State item, **bd-h**.
- 15. HCP **last\_name** attribute data type increased from Text 50 to Text 80.
- 16. HCP email attribute data type increased from Text 80 to Text 128.

- 17. Segment **name** attribute name changed from **name** to **segment\_name**.
- 18. Address **street\_address\_1** attribute data type increased from Text 80 to Text 128.
- 19. Added hcp attribute year\_of\_birth.
- 20. Added **hcp** attribute **age\_range**.
- 21. Added **Age Range Items** worksheet.

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