

# Data-analyse met SNOMED CT



**Sander Mertens**

*17 februari 2020*

**Nictiz**  Betere gezondheid  
door betere informatie



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**Disclosure belangen Sander Mertens**  
**Symposium Verbinden & Innoveren met SNOMED**  
**13 februari 2020**

Geen (potentiële) belangenverstrengeling

Voor bijeenkomst mogelijk relevante relaties

- Sponsoring of onderzoeksgeld
- Honorarium of andere (financiële) vergoeding
- Aandeelhouder
- Andere relatie, namelijk: ..

Werkzaam bij Nictiz

- Niet van toepassing
- Niet van toepassing
- Niet van toepassing
- Niet van toepassing



# Samenstellen cohort

	A	B	C	D	F
1	START	STOP	PATIENT	ENCOUNTER	DESCRIPTION
2	24-1-2010	31-1-2010	5f17497f-76a9-49ad-b77c-5c0bee5a6dfa	382a698e-8a40-4599-9ae0-1f8a54607aea	Viral sinusitis (disorder)
3	19-8-1996		6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	ef14df49-a6c6-42ab-8ffd-9e6a2ae15afc	Hypertension
4	21-5-1987	2-7-1987	580efa9a-7580-48af-9af6-df958de44206	3ba4b09a-b12a-4aec-a094-219cc9d46f6b	Otitis media
5	4-9-2006		6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	2936a8ce-3215-4391-a2b9-5abd6eb6d7a6	Body mass index 30+ - obesity (finding)
6	29-10-1979		6bd67f09-6e5d-4295-9f9b-911d49ce989d	d5962b9c-98d5-416f-893d-adac9d5af172	Body mass index 30+ - obesity (finding)
7	27-7-2015	3-8-2015	580efa9a-7580-48af-9af6-df958de44206	b5c260dc-f5b0-4756-83c4-0c3901e7f07f	Acute viral pharyngitis (disorder)
8	2-4-2016	12-4-2016	580efa9a-7580-48af-9af6-df958de44206	5cdeccec-089c-4343-95b9-b453746aa97f	Streptococcal sore throat (disorder)
9	11-9-2017	18-9-2017	580efa9a-7580-48af-9af6-df958de44206	4f2543e2-df31-4175-a00e-debe5e69bc94	Acute bronchitis (disorder)
10	22-1-2012	1-2-2012	5f17497f-76a9-49ad-b77c-5c0bee5a6dfa	7b587525-e960-47a5-b8c4-3fc5012ccd2c	Streptococcal sore throat (disorder)
11	4-1-2018		580efa9a-7580-48af-9af6-df958de44206	4270f9f9-679b-48f9-8dc0-68c36037f67b	Body mass index 30+ - obesity (finding)
12	24-4-2013	15-5-2013	5f17497f-76a9-49ad-b77c-5c0bee5a6dfa	1ef4adb5-558d-46f9-9f3f-43aa5f03a9b7	Viral sinusitis (disorder)
13	21-3-2018		580efa9a-7580-48af-9af6-df958de44206	ebadee44-2fd3-4eee-bff7-b4397fc8cf34	Otitis media
14	29-2-2012	21-3-2012	6bd67f09-6e5d-4295-9f9b-911d49ce989d	71fead43-cc81-4382-857c-3235f3bb72b3	Whiplash injury to neck
15	26-3-2018	2-4-2018	5f17497f-76a9-49ad-b77c-5c0bee5a6dfa	033bc528-8c17-43f0-a08d-2160d236945e	Viral sinusitis (disorder)
16	25-1-2014	19-4-2014	6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	d29c50b8-0d93-4658-ba61-4fe769738d73	Acute bacterial sinusitis (disorder)
17	8-3-2014		6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	e6df51d9-45e0-4adb-ad97-43e1acb855ce	Chronic sinusitis (disorder)
18	17-2-2016	24-2-2016	6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	b55a6c3f-062a-4efc-8ab4-fd5117772afd	Acute bronchitis (disorder)
19	19-1-1995		2dd89757-b8a3-48a3-ab37-f1e65034fc4e	a09fa278-bfc5-4eeb-86f1-ade0ea311ba	Hypertension
20	14-5-2009		2dd89757-b8a3-48a3-ab37-f1e65034fc4e	86c03fd2-43c9-417a-bcde-e1c8fe4a62eb	Miscarriage in first trimester
21	21-11-2013	27-3-2014	6bd67f09-6e5d-4295-9f9b-911d49ce989d	7d83630a-9f4a-4884-bdf0-7c2a35034bb8	Acute bacterial sinusitis (disorder)
22	16-1-2014	27-3-2014	6bd67f09-6e5d-4295-9f9b-911d49ce989d	8ee81936-45e4-44b4-a07d-58ddb72c329e	Chronic sinusitis (disorder)
23	16-8-2014	3-10-2014	6bd67f09-6e5d-4295-9f9b-911d49ce989d	b12407b9-781b-415b-bcf7-ea523564d4d7	Escherichia coli urinary tract infection
24	17-7-2015	24-7-2015	6bd67f09-6e5d-4295-9f9b-911d49ce989d	9bfd6906-50c9-48a9-92a5-580f1dde60a7	Streptococcal sore throat (disorder)
25	30-6-2013	21-7-2013	2dd89757-b8a3-48a3-ab37-f1e65034fc4e	2f5fc4c9-67ae-41c9-87d2-fa542cc1d1b7	Viral sinusitis (disorder)
26	1-12-2016		2dd89757-b8a3-48a3-ab37-f1e65034fc4e	c31773cc-425a-45e4-9f3b-3ca427efd36	Prediabetes
27	6-12-2018		2dd89757-b8a3-48a3-ab37-f1e65034fc4e	2fb2a97c-d7b6-47bf-bf8c-b33b1aa8a157	Anemia (disorder)
28	5-10-2016	7-8-2017	907413eb-0cdb-4929-b9db-381db93b95bc	cf98bd0e-814e-4ef3-8bd3-23c70eb957be	Otitis media
29	2-9-2017		907413eb-0cdb-4929-b9db-381db93b95bc	8e9ca618-d7fe-4aa5-8e0e-f79d8089bd93	Seasonal allergic rhinitis
30	5-3-2018	13-8-2018	907413eb-0cdb-4929-b9db-381db93b95bc	af31d16f-283c-4c76-8621-e00c8e9a102d	Otitis media
31	25-1-2019	7-2-2019	907413eb-0cdb-4929-b9db-381db93b95bc	3de288fc-9136-4ac8-83b7-863cc6a700b7	Acute viral pharyngitis (disorder)
32	27-11-2014		b9d6ecfb-7581-496f-a96c-ff5d31b118f0	5e897bc4-fb35-4595-95b6-6f931b8f184d	Perennial allergic rhinitis
33	26-7-2016	16-8-2016	b9d6ecfb-7581-496f-a96c-ff5d31b118f0	99f0ecf9-61a7-4022-81f0-aabcbfa6a03f	Viral sinusitis (disorder)
34	13-4-2017	12-6-2017	b9d6ecfb-7581-496f-a96c-ff5d31b118f0	3891c457-aaf2-4da1-9e70-5a46f8475f0f	Concussion with no loss of consciousness



# DEMO

# Vastleggen diagnose volgens ZIB Probleem

Nictiz demo    MEDISCH DOSSIER    VERPLEEGKUNDIG DOSSIER    Nictiz SNOMEDCT

**Patiënten**

- J. Hoefakker  
M 21-5-1993  
471601742
- L. Boog  
M 4-1-1994  
492900517
- E. Stegeman  
M 26-9-1992  
448509052
- B. Hoetmer  
M 16-6-1974  
455685992
- D. de Rijk  
M 8-10-1937  
453988432
- T. van Rhijn  
M 14-10-2000  
553584453
- R. Kanis

**S. van der Berg-Seuren, Shirley**    492940608

V, 16-8-1992  
Narcissenstraat 90  
1131 XB Volendam

**Episodes**

**Astma**    **REGISTREER**

**diagnose: astma**    bevestigd    1-2-2020 -   

gehele long    rechts en links

Betreft:  
Mevr. S. van der Berg-Seuren  
16-8-1992  
Adres:  
Narcissenstraat 90  
1131 XB Volendam  
Nederland

Geachte collega,  
Bovengenoemde patiënt werd op 1-2-2020 opgenomen op de afdeling B3, met als werkdiagnose astma.  
Er traden geen complicaties op. Voor een overzicht van gestelde diagnoses, zie onderstaande opsomming.  
Op werd patiënt in goede conditie naar huis ontslagen.

**Diagnoses**

astma	bevestigd	1-2-2020 -	actief
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**Diagnose koppelingen**

ICD10 code	Omschrijving
J45.9	Astma, niet gespecificeerd

Specialisme	DBC	Omschrijving
Allergologie	B1	Allergische rhinitis/conjunctivitis/astma



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	A	B	C	D	E	F
1	START	STOP	PATIENT	ENCOUNTER	CODE	DESCRIPTION
2	24-1-2010	31-1-2010	5f17497f-76a9-49ad-b77c-5c0bee5a6dfa	382a698e-8a40-4599-9ae0-1f8a54607aea	444814009	Viral sinusitis (disorder)
3	19-8-1996		6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	ef14df49-a6c6-42ab-8ffd-9e6a2ae15afc	59621000	Hypertension
4	21-5-1987	2-7-1987	580efa9a-7580-48af-9af6-df958de44206	3ba4b09a-b12a-4aec-a094-219cc9d46f6b	65363002	Otitis media
5	4-9-2006		6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	2936a8ce-3215-4391-a2b9-5abd6eb6d7a6	162864005	Body mass index 30+ - obesity (finding)
6	29-10-1979		6bd67f09-6e5d-4295-9f9b-911d49ce989d	d5962b9c-98d5-416f-893d-adac9d5af172	162864005	Body mass index 30+ - obesity (finding)
7	27-7-2015	3-8-2015	580efa9a-7580-48af-9af6-df958de44206	b5c260dc-f5b0-4756-83c4-0c3901e7f07f	195662009	Acute viral pharyngitis (disorder)
8	2-4-2016	12-4-2016	580efa9a-7580-48af-9af6-df958de44206	5cdeccec-089c-4343-95b9-b453746aa97f	43878008	Streptococcal sore throat (disorder)
9	11-9-2017	18-9-2017	580efa9a-7580-48af-9af6-df958de44206	4f2543e2-df31-4175-a00e-debe5e69bc94	10509002	Acute bronchitis (disorder)
10	22-1-2012	1-2-2012	5f17497f-76a9-49ad-b77c-5c0bee5a6dfa	7b587525-e960-47a5-b8c4-3fc5012ccd2c	43878008	Streptococcal sore throat (disorder)
11	4-1-2018		580efa9a-7580-48af-9af6-df958de44206	4270f9f9-679b-48f9-8dc0-68c36037f67b	162864005	Body mass index 30+ - obesity (finding)
12	24-4-2013	15-5-2013	5f17497f-76a9-49ad-b77c-5c0bee5a6dfa	1ef4adb5-558d-46f9-9f3f-43aaf503a9b7	444814009	Viral sinusitis (disorder)
13	21-3-2018		580efa9a-7580-48af-9af6-df958de44206	ebadee44-2fd3-4eee-bff7-b4397fc8cf34	65363002	Otitis media
14	29-2-2012	21-3-2012	6bd67f09-6e5d-4295-9f9b-911d49ce989d	71fead43-cc81-4382-857c-3235f3bb72b3	39848009	Whiplash injury to neck
15	26-3-2018	2-4-2018	5f17497f-76a9-49ad-b77c-5c0bee5a6dfa	033bc528-8c17-43f0-a08d-2160d236945e	444814009	Viral sinusitis (disorder)
16	25-1-2014	19-4-2014	6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	d29c50b8-0d93-4658-ba61-4fe769738d73	75498004	Acute bacterial sinusitis (disorder)
17	8-3-2014		6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	e6df51d9-45e0-4adb-ad97-43e1acb855ce	40055000	Chronic sinusitis (disorder)
18	17-2-2016	24-2-2016	6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	b55a6c3f-062a-4efc-8ab4-fd5117772afd	10509002	Acute bronchitis (disorder)
19	19-1-1995		2dd89757-b8a3-48a3-ab37-f1e65034fc4e	a09fa278-bfc5-4eeb-86f1-adeff0ea311ba	59621000	Hypertension
20	14-5-2009		2dd89757-b8a3-48a3-ab37-f1e65034fc4e	86c03fd2-43c9-417a-bcde-e1c8fe4a62eb	19169002	Miscarriage in first trimester
21	21-11-2013	27-3-2014	6bd67f09-6e5d-4295-9f9b-911d49ce989d	7d83630a-9f4a-4884-bdf0-7c2a35034bb8	75498004	Acute bacterial sinusitis (disorder)
22	16-1-2014	27-3-2014	6bd67f09-6e5d-4295-9f9b-911d49ce989d	8ee81936-45e4-44b4-a07d-58ddb72c329e	40055000	Chronic sinusitis (disorder)
23	16-8-2014	3-10-2014	6bd67f09-6e5d-4295-9f9b-911d49ce989d	b12407b9-781b-415b-bcf7-ea523564d4d7	301011002	Escherichia coli urinary tract infection
24	17-7-2015	24-7-2015	6bd67f09-6e5d-4295-9f9b-911d49ce989d	9bfd6906-50c9-48a9-92a5-580f1dde60a7	43878008	Streptococcal sore throat (disorder)
25	30-6-2013	21-7-2013	2dd89757-b8a3-48a3-ab37-f1e65034fc4e	2f5fc4c9-67ae-41c9-87d2-fa542cc1d1b7	444814009	Viral sinusitis (disorder)
26	1-12-2016		2dd89757-b8a3-48a3-ab37-f1e65034fc4e	c31773cc-425a-45e4-9f3b-3ca427efdb36	15777000	Pre-diabetes
27	6-12-2018		2dd89757-b8a3-48a3-ab37-f1e65034fc4e	2fb2a97c-d7b6-47bf-bf8c-b33b1aa8a157	271737000	Anemia (disorder)
28	5-10-2016	7-8-2017	907413eb-0cdb-4929-b9db-381db93b95bc	cf98bd0e-814e-4ef3-8bd3-23c70eb957be	65363002	Otitis media
29	2-9-2017		907413eb-0cdb-4929-b9db-381db93b95bc	8e9ca618-d7fe-4aa5-8e0e-f79d8089bd93	367498001	Seasonal allergic rhinitis
30	5-3-2018	13-8-2018	907413eb-0cdb-4929-b9db-381db93b95bc	af31d16f-283c-4c76-8621-e00c8e9a102d	65363002	Otitis media
31	25-1-2019	7-2-2019	907413eb-0cdb-4929-b9db-381db93b95bc	3de288fc-9136-4ac8-83b7-863cc6a700b7	195662009	Acute viral pharyngitis (disorder)
32	27-11-2014		b9d6ecfb-7581-496f-a96c-ff5d31b118f0	5e897bc4-fb35-4595-95b6-6f931b8f184d	446096008	Perennial allergic rhinitis
33	26-7-2016	16-8-2016	b9d6ecfb-7581-496f-a96c-ff5d31b118f0	99f0ecf9-61a7-4022-81f0-aabcbfa6a03f	444814009	Viral sinusitis (disorder)
34	13-4-2017	12-6-2017	b9d6ecfb-7581-496f-a96c-ff5d31b118f0	3891c457-aaf2-4da1-9e70-5a46f8475f0f	62106007	Concussion with no loss of consciousness

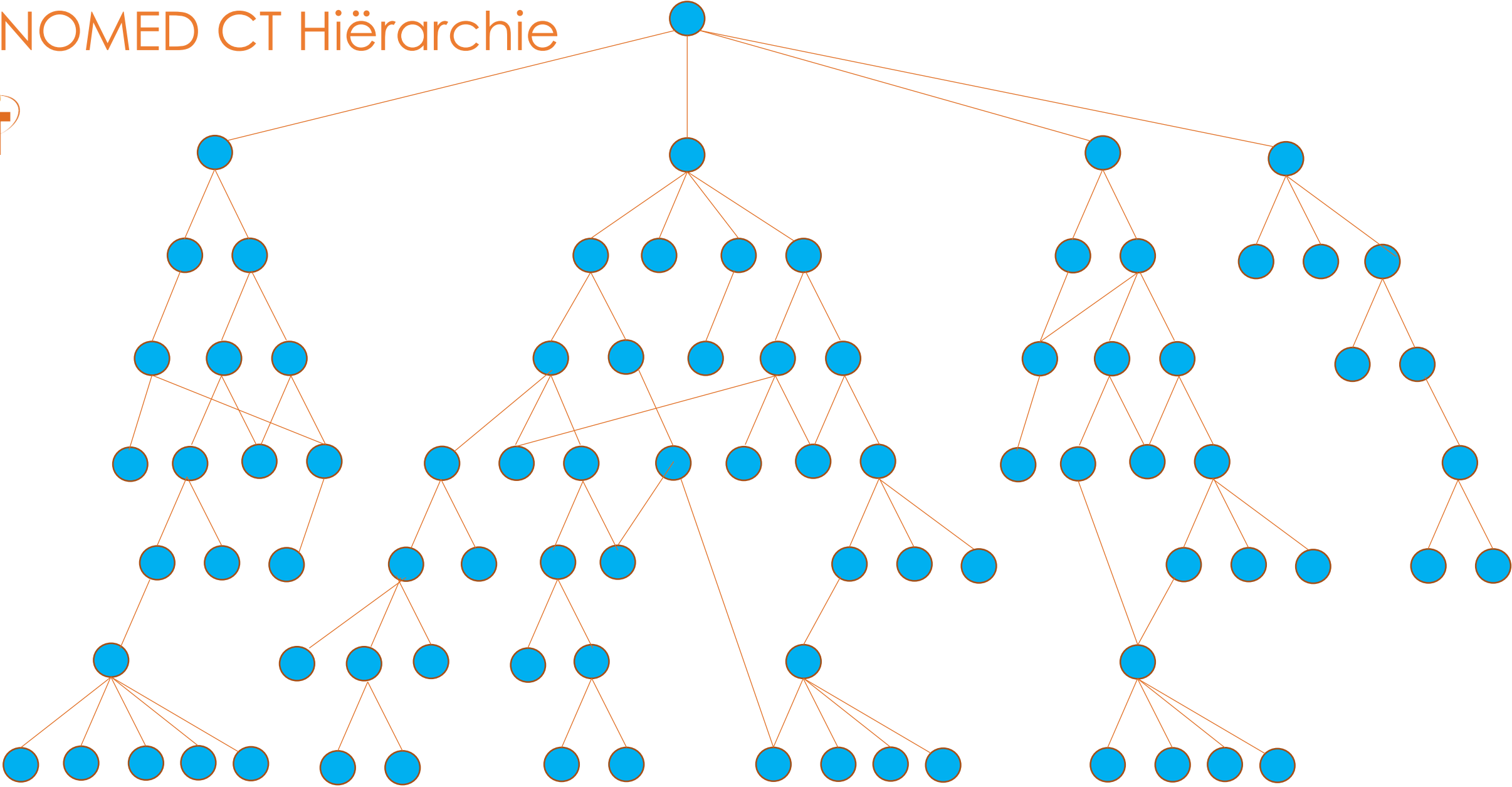


# Samenstellen cohort

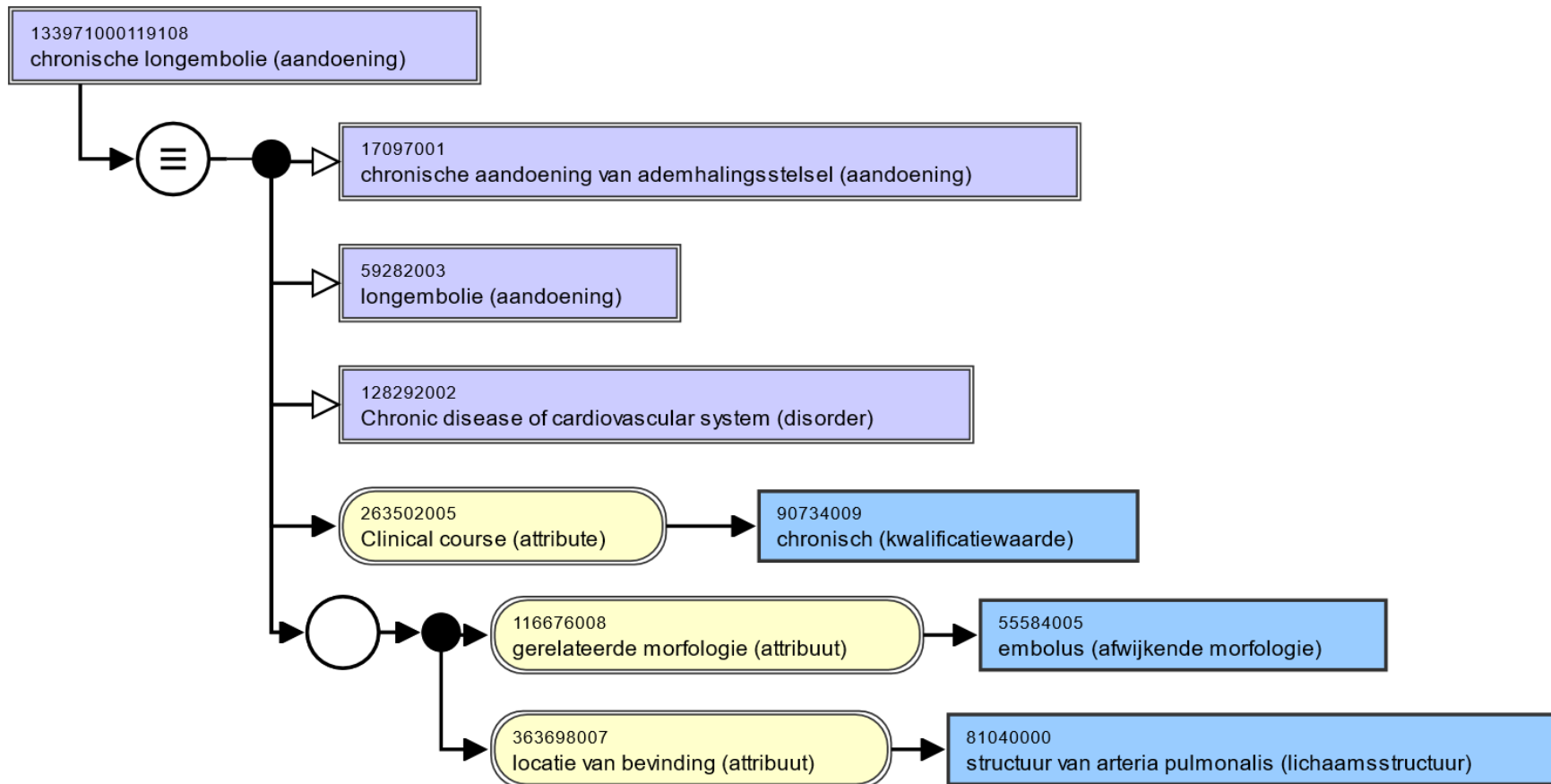
	A	B	C	D	E	F
1	START	STOP	PATIENT	ENCOUNTER	CODE	DESCRIPTION
2	26-11-2010	26-11-2010	ba6f9077-b86e-4933-adfd-55b8c69e4c27	c5496ea5-f833-407d-9014-f28842153ba9	241929008	Acute allergic reaction
3	29-9-2009	29-9-2009	ce6cb44f-b6f1-4e6d-b842-6cb1a50495f2	566e9aee-efbd-4aa0-9197-8d38141a545d	241929008	Acute allergic reaction
4	20-6-2017	20-6-2017	ce6cb44f-b6f1-4e6d-b842-6cb1a50495f2	a8e943dd-7df5-4990-a057-3be7b94cd185	241929008	Acute allergic reaction
5	28-7-2014	28-7-2014	849d3e3f-591e-4c06-9d58-364ea4b42654	63011b04-8b2d-455b-9963-5c66839bb53d	241929008	Acute allergic reaction
6	19-4-2010	19-4-2010	8b87df09-c136-44aa-96ae-b6fbd88cadc2	b9feb78c-ff97-4632-8af9-a059d4e03338	241929008	Acute allergic reaction
7	12-5-2010	12-5-2010	4578c09f-3968-43af-9b39-8c5a7efa0f66	b0158e41-2820-4b1b-8f68-e3d953b47050	241929008	Acute allergic reaction
8	4-10-2016	4-10-2016	b4f2094e-3cba-41d6-88d7-be40b51732ef	b4c1e6cb-84c8-467a-9ad3-63bf42d88734	241929008	Acute allergic reaction
9	29-8-2010	29-8-2010	9576dfcd-9fbc-4fce-b739-7b36847efd73	87c41f15-54bd-472f-9d3f-d59ed5d52353	241929008	Acute allergic reaction
10	6-12-2016	6-12-2016	6208da83-5695-4b50-9a0a-be07a80ff206	9e6e11aa-1504-41ad-ab01-cf063dc45b63	241929008	Acute allergic reaction
11	22-3-2010	22-3-2010	f125efe9-c1e2-45ef-9ae9-c06b8a45d886	8de09474-1d78-49ec-b465-6d8bb6270aee	241929008	Acute allergic reaction
12	4-8-2017	4-8-2017	10a135d2-86c2-49db-bdf5-a5ed623d226b	a1baa0cd-3dc3-4e7b-b767-fe0c69c78777	241929008	Acute allergic reaction
13	29-7-2010	29-7-2010	8b14cd4b-59e9-4276-8058-d23aa444cc2d	08bbb7a8-9b0d-4447-9c50-48f07bee818	241929008	Acute allergic reaction
14	11-2-2011	11-2-2011	d2df4818-081a-41da-93ba-fd4939eb929b	93172350-c798-4ab3-80b8-2b49e2a31e2c	241929008	Acute allergic reaction
15	13-11-1969	14-11-1969	3d88d60b-76c3-4965-9c2f-5ba5fe3c3013	c0650869-d534-4fd7-aecl-fc12c7bb4bde	241929008	Acute allergic reaction
16	1-12-2018	1-12-2018	c79a9805-0dac-4dcc-9951-0e571e7e7259	07f41f01-8eb5-4c24-8810-ea36785a1393	241929008	Acute allergic reaction
17	5-1-2017	5-1-2017	f6fe9ca2-a2c0-46fe-ae3a-900c05843aa8	4e55d0df-f3fe-488b-a11f-3249a2a16920	241929008	Acute allergic reaction
18	29-9-1998	29-9-1998	5e4164e4-f6f0-4ff8-abf3-2790170b3e30	19c11bd0-dcff-4468-89f0-7dd350407e87	241929008	Acute allergic reaction
19	24-2-2014	24-2-2014	b92ab73f-5cdb-4c53-951d-f4763e72bdb6	9a39d254-e84e-41a2-be0a-d50c9a8e2aff	241929008	Acute allergic reaction
20	6-3-2018	6-3-2018	b92ab73f-5cdb-4c53-951d-f4763e72bdb6	2b58f6dc-87e9-4536-a986-07e3c2aa96c4	241929008	Acute allergic reaction
21	9-3-2018	9-3-2018	f98d71a6-b81a-47a5-95a4-67b089462a46	3abd0232-8595-4386-a38c-7ed6efac3b46	241929008	Acute allergic reaction
22	15-10-2012	15-10-2012	8ead9e22-0672-490b-be83-7ba8ad2a3f82	c261bcc1-6494-4e5e-8327-6a677daa7889	241929008	Acute allergic reaction
23	30-12-2010	30-12-2010	a35ca0ec-2715-4689-a3d0-bbbc7a6d6846	59d20c5f-de91-4483-9848-d9cfa6f65fdc5	241929008	Acute allergic reaction
24	30-12-2012	30-12-2012	1f30d380-922e-4e96-9d8f-7185c80fef7e	891b3d9d-7433-41f1-b6b9-075520e3e877	241929008	Acute allergic reaction
25	23-6-2015	23-6-2015	7fab79ef-91d3-4e9e-a4bc-6d63fd4b7fd3	e9afaa20-1d86-4ca4-b98e-d3bda34935ba	241929008	Acute allergic reaction
26	26-3-2014	26-3-2014	dbade784-f81f-499a-bccb-d329d4954292	fc9a2a62-9f2b-4c0c-91f2-841553a3f1dc	241929008	Acute allergic reaction
27	11-7-2017	11-7-2017	efbd5e07-7249-4c98-9f69-fbea20a23426	aa8fdee8-6f68-4b30-b3d7-9aaaaf27c85b	241929008	Acute allergic reaction
28	3-8-2016	3-8-2016	308d820e-b3f3-4815-aa89-e9255b5096cd	8d4878bb-ede3-447e-8ef3-d310119a0710	241929008	Acute allergic reaction
29	14-9-2018	14-9-2018	5e217f6c-fbae-48f7-8879-3a6dcadf22e7	c8d585c4-3459-4903-9fea-f34c0940b772	241929008	Acute allergic reaction
30	12-3-2016	12-3-2016	b778779b-4d91-43e3-9194-54456dd3577a	1b7cefdd-12b7-4afd-a77f-10484c7386f0	241929008	Acute allergic reaction
31	19-10-2018	19-10-2018	03972b09-29ba-404b-9142-ec2bc0a4a51b	5e654430-0f12-4a03-b6ea-3289b92ba30f	241929008	Acute allergic reaction
32	13-9-2014	13-9-2014	e6178c06-9351-4808-bceb-604cfc272ad4	e8c2ba25-cc71-45b3-ac63-2653510982f7	241929008	Acute allergic reaction
33	13-12-2015	13-12-2015	c66b195c-a378-4236-bb21-8d17132d6e46	aceea027-7f9e-4ce5-9213-5c606874dedc	241929008	Acute allergic reaction
34	11-7-2014	12-7-2014	e7931a84-daac-4926-a016-50a93ee30bbe	e6e19d06-afef-4c39-9626-46ceca66290e	241929008	Acute allergic reaction



# SNOMED CT Hierarchie

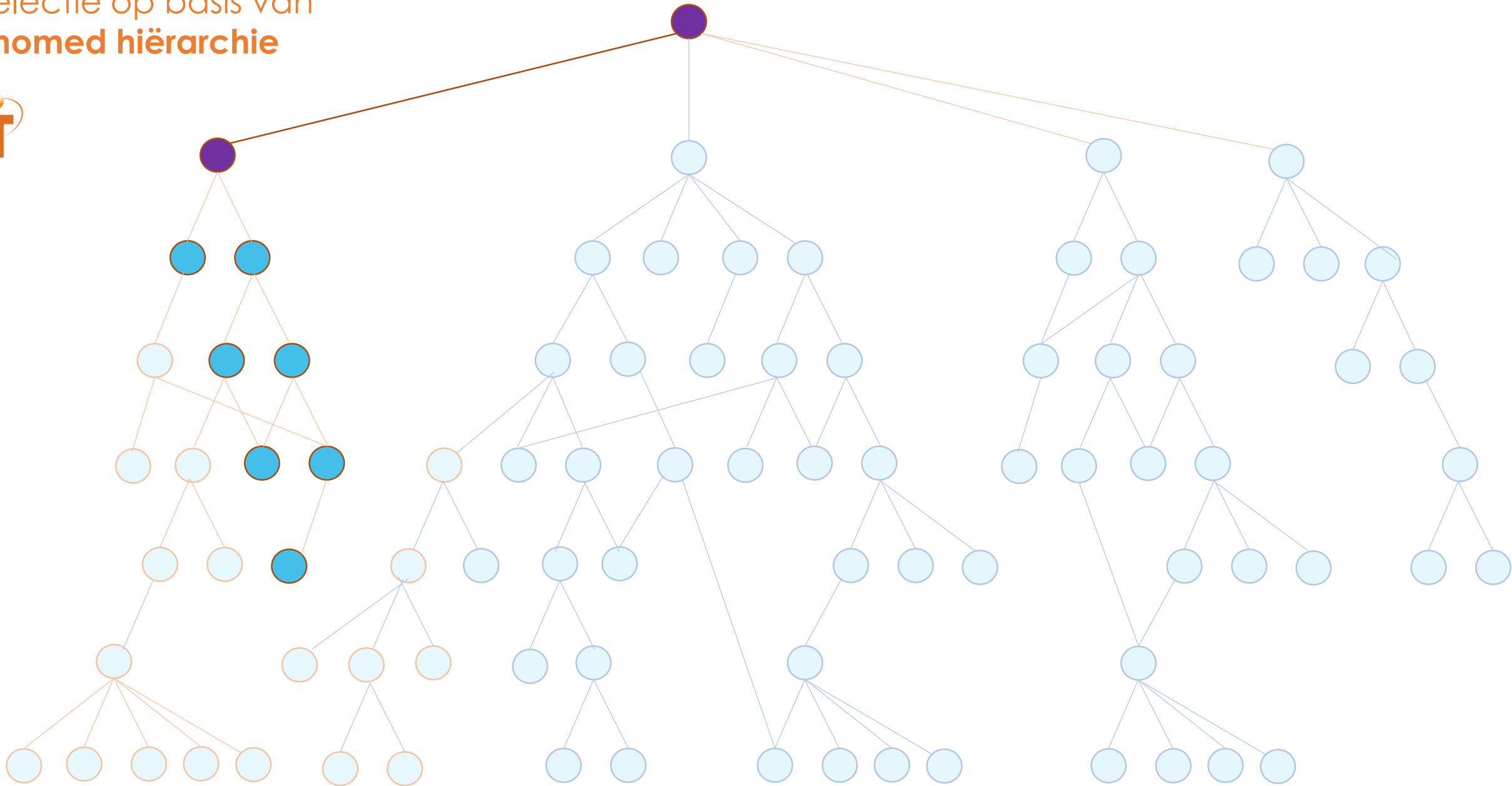


# Snomed concepten





Selectie op basis van  
**Snomed hiërarchie**






# Samenstellen cohort

	A	B	C	D	E	F
1	START	STOP	PATIENT	ENCOUNTER	CODE	DESCRIPTION
2	24-1-2010	31-1-2010	5f17497f-76a9-49ad-b77c-5c0bee5a6dfa	382a698e-8a40-4599-9ae0-1f8a54607aea	444814009	Viral sinusitis (disorder)
3	19-8-1996		6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	ef14df49-a6c6-42ab-8ffd-9e6a2ae15afc	59621000	Hypertension
4	21-5-1987	2-7-1987	580efa9a-7580-48af-9af6-df958de44206	3ba4b09a-b12a-4aec-a094-219cc9d46f6b	65363002	Ctitis media
5	4-9-2006		6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	2936a8ce-3215-4391-a2b9-5abd6eb6d7a6	162864005	Body mass index 30+ - obesity (finding)
6	29-10-1979		6bd67f09-6e5d-4295-9f9b-911d49ce989d	d5962b9c-98d5-416f-893d-adac9d5af172	162864005	Body mass index 30+ - obesity (finding)
7	27-7-2015	3-8-2015	580efa9a-7580-48af-9af6-df958de44206	b5c260dc-f5b0-4756-83c4-0c3901e7f07f	195662009	Acute viral pharyngitis (disorder)
8	2-4-2016	12-4-2016	580efa9a-7580-48af-9af6-df958de44206	5cdeccec-089c-4343-95b9-b453746aa97f	43878008	Streptococcal sore throat (disorder)
9	11-9-2017	18-9-2017	580efa9a-7580-48af-9af6-df958de44206	4f2543e2-df31-4175-a00e-debe5e69bc94	10509002	Acute bronchitis (disorder)
10	22-1-2012	1-2-2012	5f17497f-76a9-49ad-b77c-5c0bee5a6dfa	7b587525-e960-47a5-b8c4-3fc5012ccd2c	43878008	Streptococcal sore throat (disorder)
11	4-1-2018		580efa9a-7580-48af-9af6-df958de44206	4270f9f9-679b-48f9-8dc0-68c36037f67b	162864005	Body mass index 30+ - obesity (finding)
12	24-4-2013	15-5-2013	5f17497f-76a9-49ad-b77c-5c0bee5a6dfa	1ef4adb5-558d-46f9-9f3f-43aaf503a9b7	444814009	Viral sinusitis (disorder)
13	21-3-2018		580efa9a-7580-48af-9af6-df958de44206	ebadee44-2fd3-4eee-bff7-b4397fc8cf34	65363002	Ctitis media
14	29-2-2012	21-3-2012	6bd67f09-6e5d-4295-9f9b-911d49ce989d	71fead43-c81-4382-857c-3235f3bb72b3	39848009	Whiplash injury to neck
15	26-3-2018	2-4-2018	5f17497f-76a9-49ad-b77c-5c0bee5a6dfa	033bc528-8c17-43f0-a08d-2160d236945e	444814009	Viral sinusitis (disorder)
16	25-1-2014	19-4-2014	6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	d29c50b8-0d93-4658-ba61-4fe769738d73	75498004	Acute bacterial sinusitis (disorder)
17	8-3-2014		6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	e6df51d9-45e0-4adb-ad97-43e1acb855ce	40055000	Chronic sinusitis (disorder)
18	17-2-2016	24-2-2016	6df948f6-8d93-40ae-87e9-d9ed0a6f0f64	b55a6c3f-062a-4efc-8ab4-fd5117772afd	10509002	Acute bronchitis (disorder)
19	19-1-1995		2dd89757-b8a3-48a3-ab37-f1e65034fc4e	a09fa278-bfc5-4eeb-86f1-aded0ea311ba	59621000	Hypertension
20	14-5-2009		2dd89757-b8a3-48a3-ab37-f1e65034fc4e	86c03fd2-43c9-417a-bcde-e1c8fe4a62eb	19169002	Miscarriage in first trimester
21	21-11-2013	27-3-2014	6bd67f09-6e5d-4295-9f9b-911d49ce989d	7d83630a-9f4a-4884-bdf0-7c2a35034bb8	75498004	Acute bacterial sinusitis (disorder)
22	16-1-2014	27-3-2014	6bd67f09-6e5d-4295-9f9b-911d49ce989d	8ee81936-45e4-44b4-a07d-58ddb72c329e	40055000	Chronic sinusitis (disorder)
23	16-8-2014	3-10-2014	6bd67f09-6e5d-4295-9f9b-911d49ce989d	b12407b9-781b-415b-bcf7-ea523564d4d7	301011002	Escherichia coli urinary tract infection
24	17-7-2015	24-7-2015	6bd67f09-6e5d-4295-9f9b-911d49ce989d	9bfd6906-50c9-48a9-92a5-580f1dde60a7	43878008	Streptococcal sore throat (disorder)
25	30-6-2013	21-7-2013	2dd89757-b8a3-48a3-ab37-f1e65034fc4e	2f5fc4c9-67ae-41c9-87d2-fa542cc1d1b7	444814009	Viral sinusitis (disorder)
26	1-12-2016		2dd89757-b8a3-48a3-ab37-f1e65034fc4e	c31773cc-425a-45e4-9f3b-3ca427efdb36	15777000	Pre-diabetes
27	6-12-2018		2dd89757-b8a3-48a3-ab37-f1e65034fc4e	2fb2a97c-d7b6-47bf-bf8c-b33b1aa8a157	271737000	Anemia (disorder)
28	5-10-2016	7-8-2017	907413eb-0cdb-4929-b9db-381db93b95bc	cf98bd0e-814e-4ef3-8bd3-23c70be957be	65363002	Ctitis media
29	2-9-2017		907413eb-0cdb-4929-b9db-381db93b95bc	8e9ca618-d7fe-4aa5-8e0e-f79d8089bd93	367498001	Seasonal allergic rhinitis
30	5-3-2018	13-8-2018	907413eb-0cdb-4929-b9db-381db93b95bc	af31d16f-283c-4c76-8621-e00c8e9a102d	65363002	Ctitis media
31	25-1-2019	7-2-2019	907413eb-0cdb-4929-b9db-381db93b95bc	3de288fc-9136-4ac8-83b7-863cc6a700b7	195662009	Acute viral pharyngitis (disorder)
32	27-11-2014		b9d6ecfb-7581-496f-a96c-ff5d31b118f0	5e897bc4-fb35-4595-95b6-6f931b8f184d	446096008	Perennial allergic rhinitis
33	26-7-2016	16-8-2016	b9d6ecfb-7581-496f-a96c-ff5d31b118f0	99f0ecf9-61a7-4022-81f0-aabcbfa6a03f	444814009	Viral sinusitis (disorder)
34	13-4-2017	12-6-2017	b9d6ecfb-7581-496f-a96c-ff5d31b118f0	3891c457-aaf2-4da1-9e70-5a46f8475f0f	62106007	Concussion with no loss of consciousness



# DEMO

# Cohortselectie met Health Data Analytics

 Health Data Analytics      Subsets      Cohorts

Demographic:

Gender


Minimum Age

Maximum Age

Primary Exposure:

Disorder       Primary Exposure

# Samenstellen cohort met API

 **swagger** default (v2/api-docs)  Explore

## Snowstorm

SNOMED CT Terminology Server REST API

Created by SNOMED International  
See more at <https://github.com/IHTSDO/snowstorm>  
[Apache 2.0](#)

**Authoring Stats** : - Show/Hide | List Operations | Expand Operations

**Branching** : - Show/Hide | List Operations | Expand Operations

**Code Systems** : - Show/Hide | List Operations | Expand Operations

**Concepts** : - Show/Hide | List Operations | Expand Operations

GET	/browser/{branch}/concepts	Load concepts in the browser format.
GET	/browser/{branch}/concepts/bulk/{bulkChangeId}	Fetch the status of a bulk concept creation or update.
GET	/browser/{branch}/concepts/{conceptId}	Load a concept in the browser format.
GET	/browser/{branch}/concepts/{conceptId}/ancestors	findConceptAncestors
GET	/browser/{branch}/concepts/{conceptId}/children	findConceptChildren
GET	/browser/{branch}/concepts/{conceptId}/parents	findConceptParents
GET	/{branch}/concepts	findConcepts

Response Class (Status 200)  
OK

Model | Model Schema

```
{
  "items": {},
  "limit": 0,
  "offset": 0,
  "searchAfter": "string",
  "searchAfterArray": [
```

# Samenstellen cohort met API

Pre-coordinated expression

```
74400008 |Appendicitis (disorder)|
```

Expression from inferred view

```
== 18526009 |aandoening van appendix vermiformis (aandoening)| +  
302168000 |ontsteking van dikke darm (aandoening)| :  
  { 116676008 |gerelateerde morfologie (attribuut)| = 409774005 |inflammatoire morfologie (afwijkende morfologie)|,  
    363698007 |locatie van bevinding (attribuut)| = 66754008 |structuur van appendix vermiformis (lichaamsstructuur)| }
```

# Samenstellen cohort met API

## Response Body

```
{
  "items": [
    {
      "conceptId": "735591005",
      "effectiveTime": "20180131",
      "moduleId": "900000000000207008",
      "active": true,
      "fsn": {
        "term": "Acute phlegmonous appendicitis (disorder)",
        "lang": "en"
      },
      "definitionStatus": "FULLY_DEFINED",
      "pt": {
        "term": "Acute phlegmonous appendicitis",
        "lang": "en"
      },
      "id": "735591005"
    },
    {
      "conceptId": "733157003",
```



**DEMO**

**Cohortselectie met Snowstorm / R**





**DEMO**

**Cohortselectie met Neo4j**



# Meer informatie?

## Handige links

[github.com/IHTSDO](https://github.com/IHTSDO)

[github.com/synthetichealth/synthea](https://github.com/synthetichealth/synthea)

[snomed.org/ecl](https://snomed.org/ecl)

[snomedbrowser.nl](https://snomedbrowser.nl)

[rstudio.com](https://rstudio.com)

[neo4j.com](https://neo4j.com)

## Vragen?

[confluence.ihtsdotools.org/display/DEV/Netherlands](https://confluence.ihtsdotools.org/display/DEV/Netherlands)

[info@snomed.nl](mailto:info@snomed.nl)

# Status Vertaling SNOMED

Voortgang over tijd

