

Supplementary Material

Screenshot: Frequency tables

Tabellen Diagramme Patientenakten

Filter: Bösartige Neubildung des Pankreas

ICD	OPS	ATC	Sonstige
Hauptdiagnosen	Strahlentherapie, nuklearmedizinische Therapie und Chemotherapie	Antineoplastische Mittel	Geschlecht
Nebendiagnosen	Zytostatische Chemotherapie, Immuntherapie und antiretrovirale Therapie		Aufnahmealter
Diabetes mellitus	Transfusion von Blutzellen		
Bösartige Neubildung des Pankreas	Operationen an Gallenblase und Gallenwegen		
Bösartige Neubildungen			

Zusammenführen von: --- ▾

Kode	Kapitel	Gruppe	Kategorie	Subkategorie 1	Subkategorie 2	Anzahl	%
C25.0 (HD)	C00-C97	C15-C26: Bösartige Neubildungen der Verdauungsorgane	Bösartige Neubildung des Pankreas	Pankreaskopf	NA	9	64.3
C25.8 (HD)	C00-C97	C15-C26: Bösartige Neubildungen der Verdauungsorgane	Bösartige Neubildung des Pankreas	Pankreas, mehrere Teilbereiche überlappend	NA	7	50
C25.8 (ND)	C00-C97	C15-C26: Bösartige Neubildungen der Verdauungsorgane	Bösartige Neubildung des Pankreas	Pankreas, mehrere Teilbereiche überlappend	NA	7	50
C25.9 (HD)	C00-C97	C15-C26: Bösartige Neubildungen der Verdauungsorgane	Bösartige Neubildung des Pankreas	Pankreas, nicht näher bezeichnet	NA	6	42.9
C25.9 (ND)	C00-C97	C15-C26: Bösartige Neubildungen der Verdauungsorgane	Bösartige Neubildung des Pankreas	Pankreas, nicht näher bezeichnet	NA	6	42.9
C25.0 (ND)	C00-C97	C15-C26: Bösartige Neubildungen der Verdauungsorgane	Bösartige Neubildung des Pankreas	Pankreaskopf	NA	4	28.6
C25.1 (HD)	C00-C97	C15-C26: Bösartige Neubildungen der Verdauungsorgane	Bösartige Neubildung des Pankreas	Pankreaskörper	NA	1	7.1
C25.7 (HD)	C00-C97	C15-C26: Bösartige Neubildungen der Verdauungsorgane	Bösartige Neubildung des Pankreas	Sonstige Teile des Pankreas	NA	1	7.1

Übersicht: ICD

Übersicht: OPS

Übersicht: ATC

Übersicht: Labor

Übersicht: DRG

Übersicht: Sonstige

Screenshot: Patient files



Tabellen Diagramme Patientenakten

Patient ID: 3

Geburtsdag:
Geschlecht:

Encounter

757

07.06.2008 - 07.06.2008

Patient ID: 3

ambulant

Verlauf

DEM

DEM|GESCHLECHT:M - männlich
DEM|AUFNALTER:44 - 44 Jahre

ICD

C25.8 (ND) Bösartige Neubildung: Pankreas, mehrere Teilbereiche überlappend - ST Station RT 52 35823 (ST52) - 2008-06-07 19:04:02

Labor

Code	Name	Wert	Flag	Einheit	Datum
LAB:6KREA	Kreatinin	0.58	@	mg/dl	2008-06-18 17:46:10
LAB:6KREC	Kreatinin-Clearance	162	H	ml/min	2008-06-18 17:46:10
LAB:6UKRE	U-Kreatinin	85.5	@	mg/dl	2008-06-18 17:46:10

Encounter

1130

18.06.2008 - 22.06.2008

Patient ID: 3

teilstationär

Verlauf

DEM

DEM|GESCHLECHT:M - männlich
DEM|AUFNALTER:44 - 44 Jahre

ICD

C25.0 (HD) Bösartige Neubildung: Pankreaskopf - ST 52 (TagesKlinik) 05823 (STTAG) - 2008-06-18 15:12:00

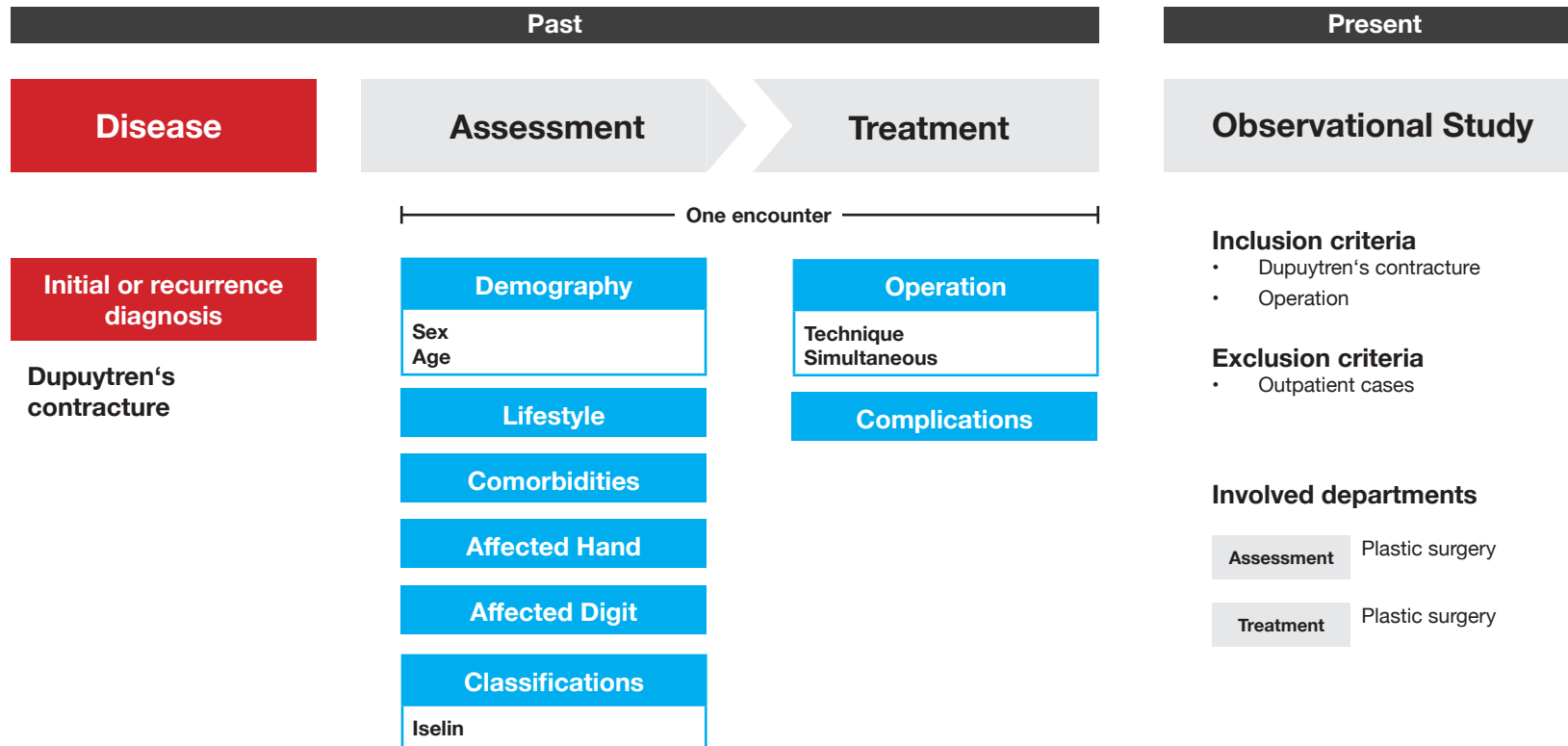
OPS

8-529.8 - Bestrahlungsplanung für perkutane Bestrahlung und Brachytherapie: Bestrahlungsplanung für perkutane Bestrahlung, mit individueller Dosisplanung - ST 3D-Bestrahlungsplanung (STSTD) - 2008-06-18 17:56:17
 8-528.9 - Bestrahlungssimulation für externe Bestrahlung und Brachytherapie: Feldfestlegung mit Simulator, mit 3D-Plan - ST 3D-Bestrahlungsplanung (STSTD) - 2008-06-22 17:10:56
 8-527.8 - Konstruktion und Anpassung von Fixations- und Behandlungshilfen bei Strahlentherapie: Individuelle Blöcke oder Viellamellenkollimator (MLC) - ST 3D-Bestrahlungsplanung (STSTD) - 2008-06-18 17:56:17
 3-222 - Computertomographie des Thorax mit Kontrastmittel - ST Computertomographie (STCT) - 2008-06-19 17:56:26
 3-225 - Computertomographie des Abdomens mit Kontrastmittel - ST Computertomographie (STCT) - 2008-06-19 17:56:26
 8-528.9 - Bestrahlungssimulation für externe Bestrahlung und Brachytherapie: Feldfestlegung mit Simulator, mit 3D-Plan - ST 3D-Bestrahlungsplanung (STSTD) - 2008-06-18 17:56:17

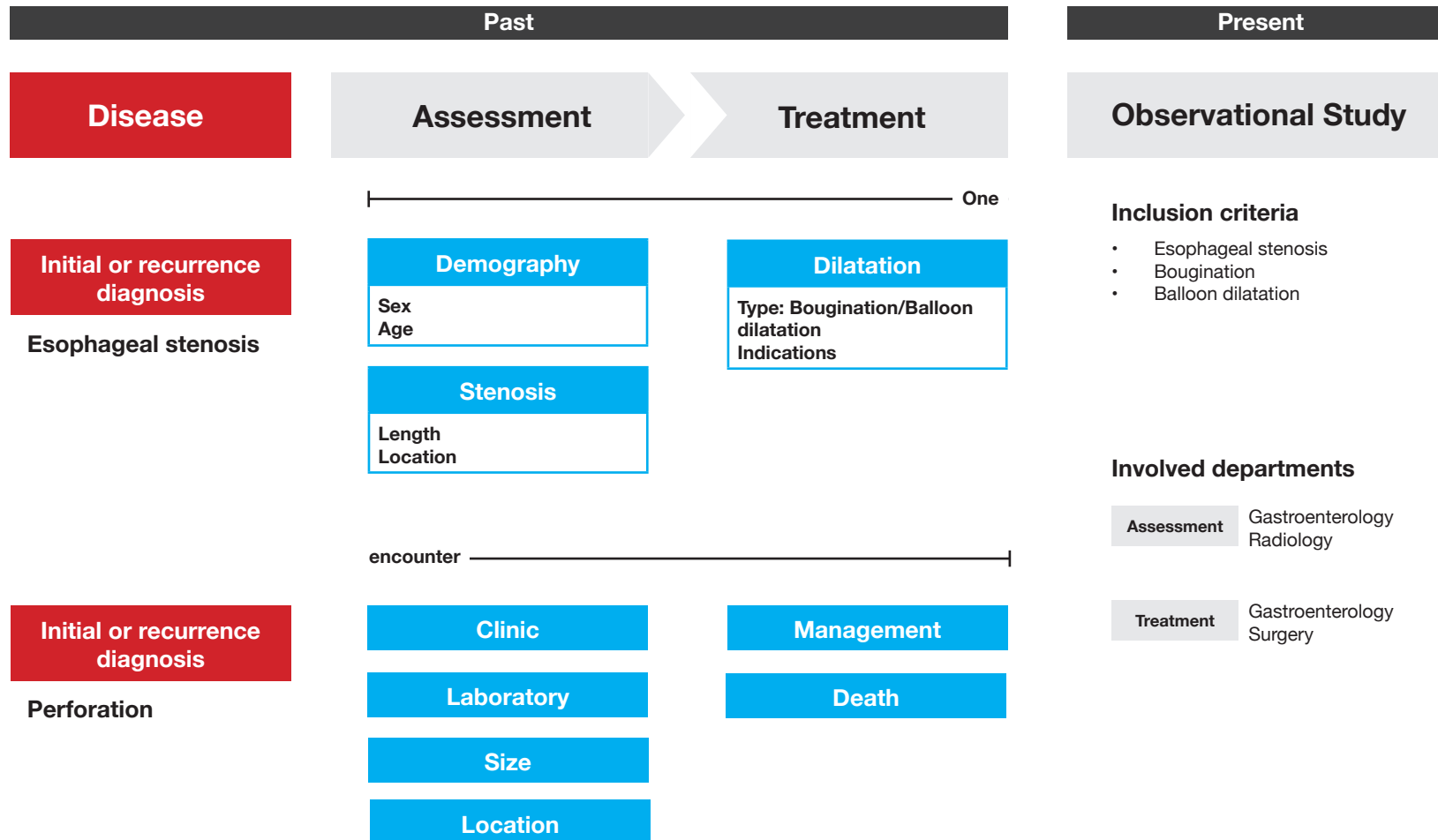
Labor

Code	Name	Wert	Flag	Einheit	Datum
LAB:6ALBU	Albumin	40.4	@	g/l	2008-06-25 19:06:10
LAB:6APO	Alk. Phosphatase	168	H	U/l	2008-06-25 19:06:10

Overview of the temporal data requirements - DPS Study

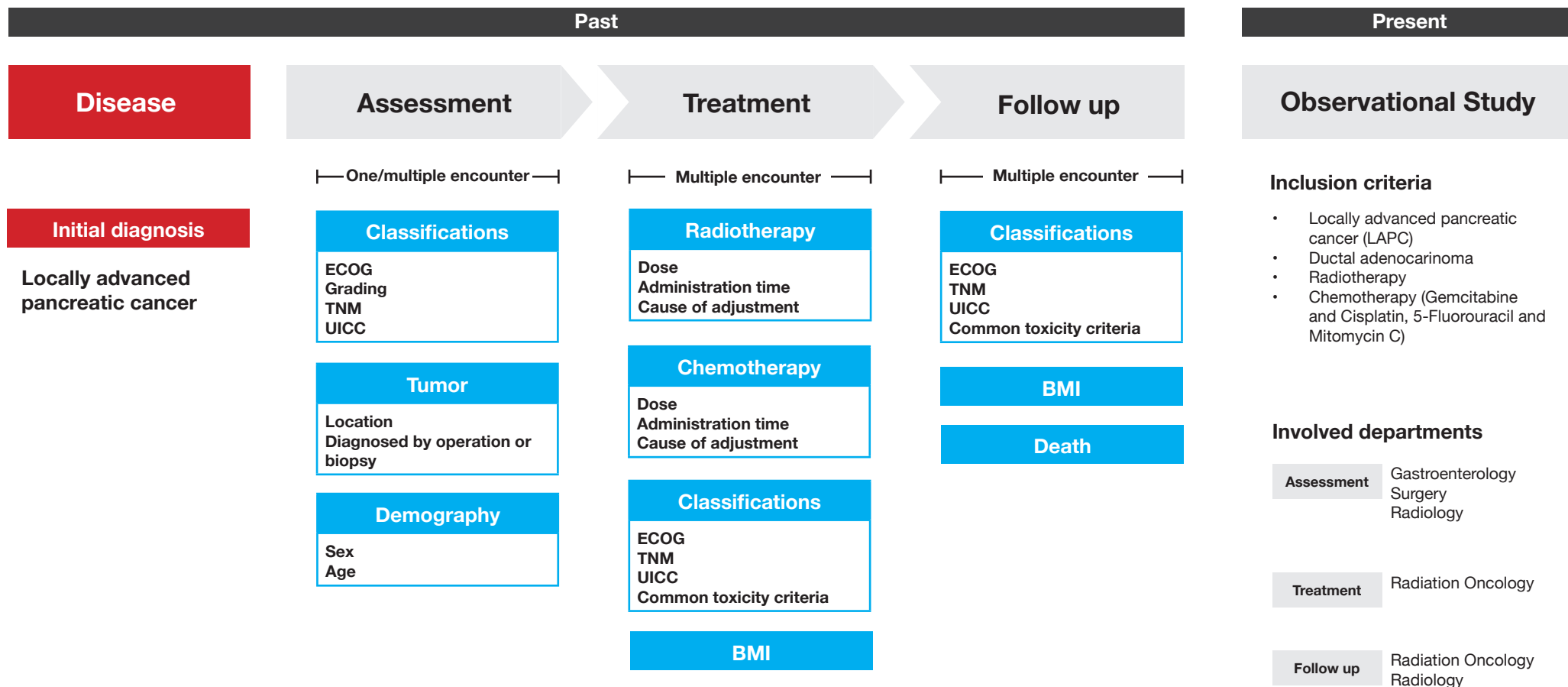


Overview of the temporal data requirements - DG Study

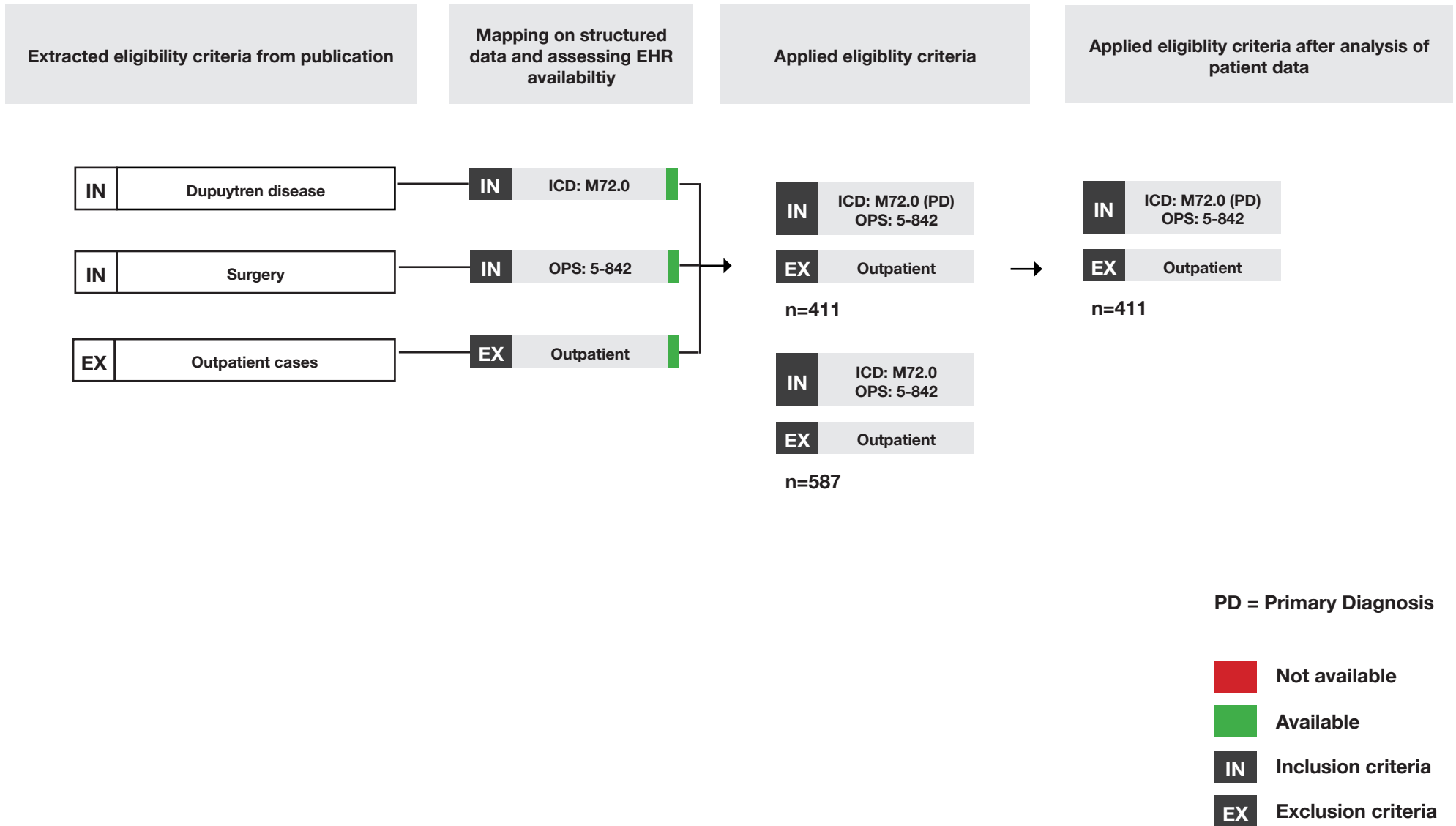


Attributes of interest

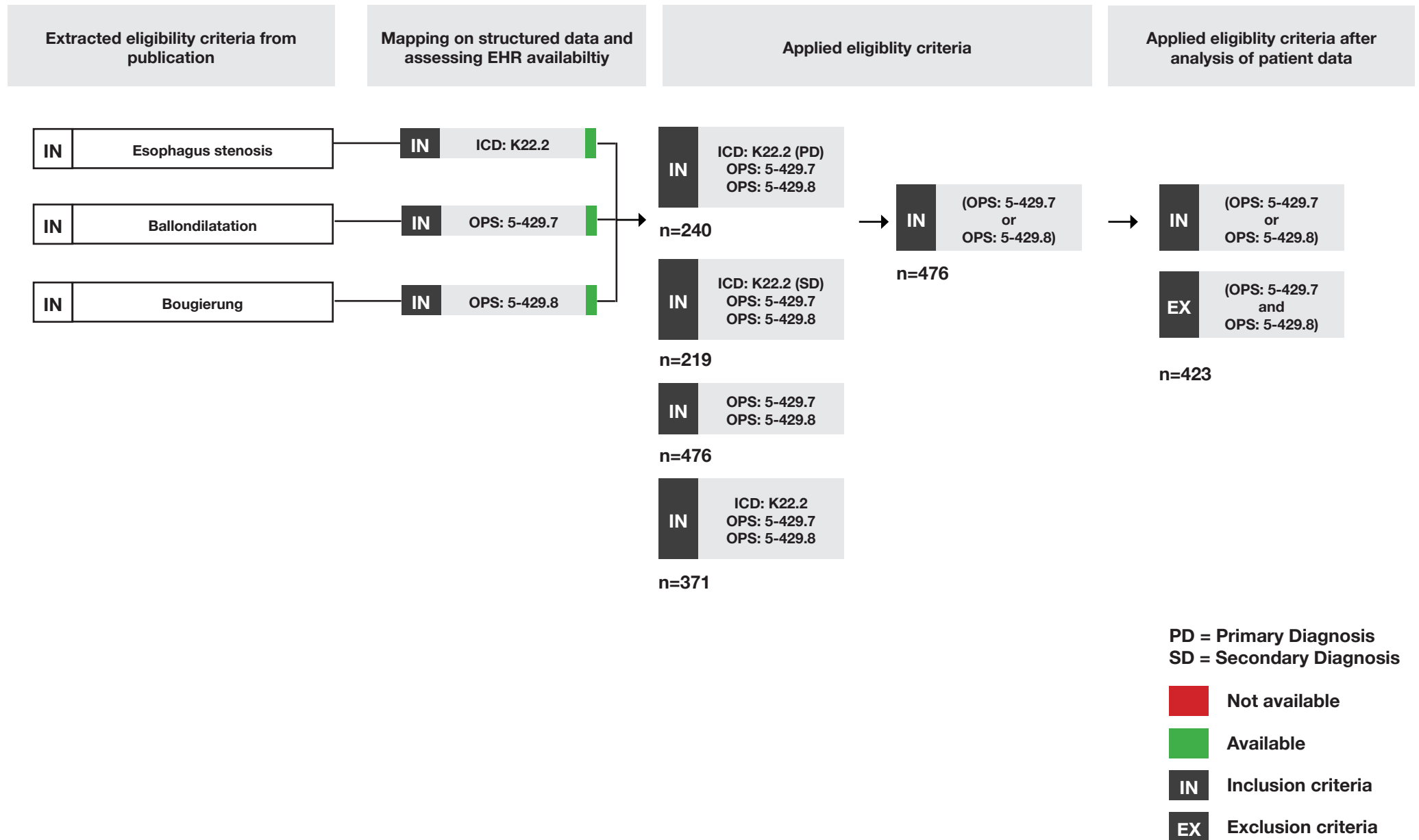
Overview of the temporal data requirements - DRO Study



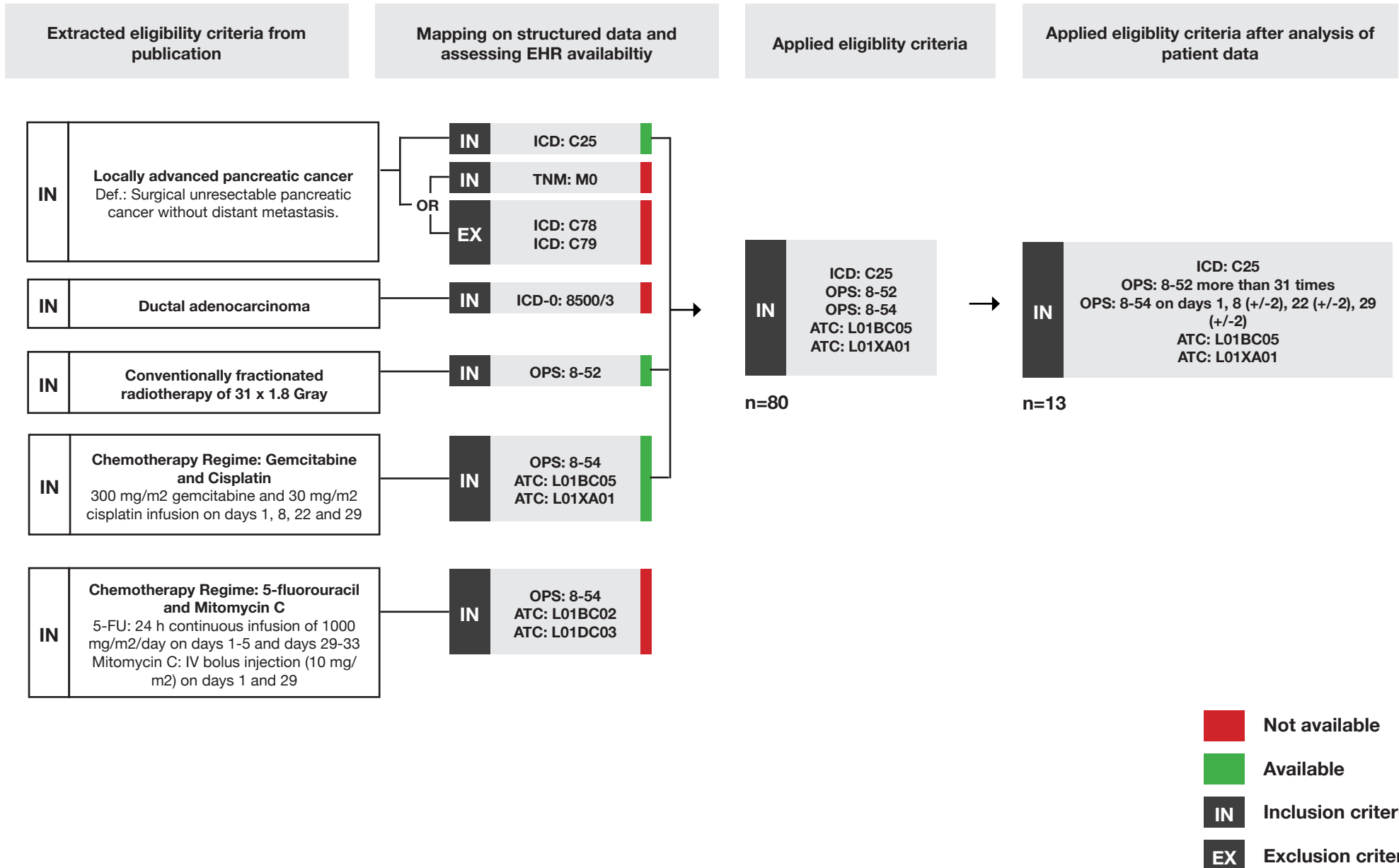
Mapping of eligibility criteria - DPS Study



Mapping of eligibility criteria - DG Study



Mapping of eligibility criteria - DRO Study



Overview of available data sources in the EHR

Administrative Data
Structured Data
Date of birth
Sex
Admission date
Discharge date
Diagnostic codes (ICD), primary and secondary diagnoses, timestamps, data provenance
Procedure codes (OPS), timestamps, data provenance
Date of death

Clinical Data
Structured Data
Laboratory
Medication (ATC)
Unstructured data
Pathology reports
Operations notes

Registry Data
Structured data
ICD-O-3

Overview of available data in accordance with eligibility criteria applied: DPS Study

Applied eligibility criteria
Inclusion 1. ICD: M72.0 (HD) 2. OPS: 5-842
Exclusion 1. Outpatient

EHR

i2b2

Overall data period: Nov 1999 - Sep 2016

Administrative Data		
Structured Data		
Attributes	No. (%)	Average per encounter
Sex	411 (100)	-
Date of Birth	411 (100)	-
Diagnosis codes (ICD 10-GM) Period: Nov 1999 - Sep 2016	411 (100)	1
Procedure codes (OPS) Period: Nov 1999 - Sep 2016	411 (100)	1
Clinical Data		
Structured Data		
Attributes	No. (%)	Average per encounter
Laboratory Period: Jan 2001 - Dec 2012	185 (45)	0.40
Unstructured Data		
Attributes	No. (%)	Average per encounter
Pathology Reports Period: May 2000 - May 2016	313 (76.2)	0.71
Operation Notes Period: Nov 2000 - Sep 2016	373 (90.8)	0.91

Description

Availability of attributes per patient and the average availability per encounter.

Overview of available data in accordance with eligibility criteria applied: DG Study

Applied eligibility criteria
Inclusion 1. OPS: 5-429.7 or OPS: 5-429.8

Applied eligibility criteria
Inclusion 1. OPS: 5-429.7 or OPS: 5-429.8
Exclusion 1. OPS: 5-429.7 and OPS: 5-429.8



Overall data period: Jan 2000 - Sep 2016

Administrative Data		
Structured Data		
Attributes	No. (%)	Average per encounter
Sex	476 (100)	-
Date of Birth	476 (100)	-
Date of Death	107 (22.5)	-
Diagnosis codes (ICD 10-GM) Period: Jun 2001 - Sep 2016	454 (95.4)	0.96
Procedure codes (OPS) Period: Dec 2000 - Sep 2016	476 (100)	1
Clinical Data		
Structured Data		
Attributes	No. (%)	Average per encounter
Laboratory Period: Dec 2002 - Jan 2012	255 (53.6)	0.45
Unstructured Data		
Attributes	No. (%)	Average per encounter
Pathology Reports Period: Sep 2001 - Jun 2016	186 (39.1)	0.21
Operation Notes Period: Jan 2001 - Aug 2016	41 (8.6)	0.03

Overall data period: Dec 2000 - Sep 2016

Administrative Data		
Structured Data		
Attributes	No. (%)	Average per encounter
Sex	423 (100)	-
Date of Birth	423 (100)	-
Date of Death	93 (21.9)	-
Diagnosis codes (ICD 10-GM) Period: Jun 2001 - Sep 2016	404 (95.5)	0.96
Procedure codes (OPS) Period: Dec 2000 - Sep 2016	423 (100)	1
Clinical Data		
Structured Data		
Attributes	No. (%)	Average per encounter
Laboratory Period: Dec 2002 - Jan 2012	213 (50.3)	0.44
Unstructured Data		
Attributes	No. (%)	Average per encounter
Pathology Reports Period: Sep 2001 - Jun 2016	161 (38.1)	0.25
Operation Notes Period: Jan 2001 - Aug 2016	35 (8.3)	0.04

Description
Availability of attributes per patient and the average availability per encounter.

Overview of available data in accordance with eligibility criteria applied: DRO Study

Applied eligibility criteria	
1.	ICD: C25
2.	OPS: 8-52
3.	OPS: 8-54

Applied eligibility criteria	
1.	ICD: C25
2.	OPS: 8-52
3.	OPS: 8-54
4.	ATC: L01BC05
5.	ATC: L01XA01

Applied eligibility criteria	
1.	ICD: C25
2.	OPS: 8-52 more than 31 times
3.	OPS: 8-54 on days 1, 8, 22, 29 (+/-2)
4.	ATC: L01BC05
5.	ATC: L01XA01

EHR

i2b2

i2b2

i2b2

Overall data period: Jan 2000 - Jun 2015

Overall data period: Oct 2007 - Sep 2015

Overall data period: Jan 2008 - May 2015

Administrative Data			
Structured Data			
Attributes	No. (%)	Average per encounter	
Sex	243 (100)	-	
Date of Birth	243 (100)	-	
Date of Death	49 (20.2)	-	
Diagnosis codes (ICD 10-GM) Period: Jan 2000 - Sep 2015	243 (100)	0.97	
Procedure codes (OPS) Period: Oct 2002 - Sep 2015	243 (100)	0.80	
Clinical Data			
Structured Data			
Attributes	No. (%)	Average per encounter	
Laboratory Period: Aug 2003 - Jan 2012	181 (74.4)	0.38	
Medication (ATC) Period: Jan 2004 - Sep 2015	186 (76.5)	0.26	
Unstructured Data			
Attributes	No. (%)	Average per encounter	
Pathology Reports Period: Oct 2002 - Jun 2015	40 (16.5)	0.02	
Operation Notes Period: Jan 2008 - Nov 2014	76 (31.3)	0.03	
Registry Data			
Structured Data			
Attributes	No. (%)	Average per encounter	
ICD-O-3 Period: Jun 2015	1 (0.4)	-	

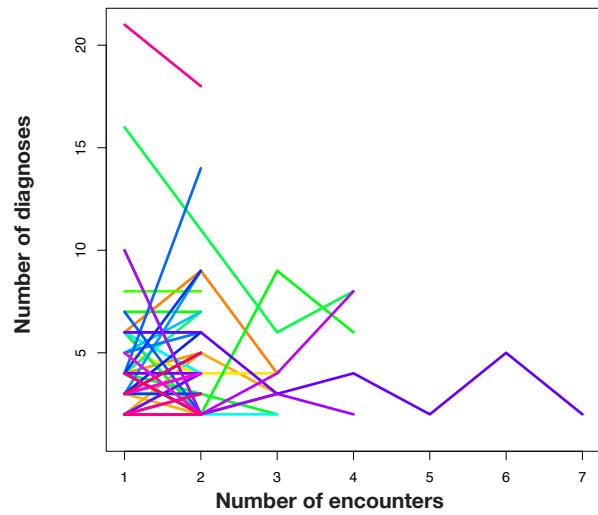
Administrative Data			
Structured Data			
Attributes	No. (%)	Average per encounter	
Sex	80 (100)	-	
Date of Birth	80 (100)	-	
Date of Death	18 (22.5)	-	
Diagnosis codes (ICD 10-GM) Period: Oct 2007 - Sep 2015	80 (100)	0.995	
Procedure codes (OPS) Period: Oct 2007 - Jul 2015	80 (100)	0.87	
Clinical Data			
Structured Data			
Attributes	No. (%)	Average per encounter	
Laboratory Period: Oct 2010 - Jan 2012	69 (86.3)	0.47	
Medication (ATC) Period: Nov 2007 - Nov 2014	80 (100)	0.34	
Unstructured Data			
Attributes	No. (%)	Average per encounter	
Pathology Reports Period: Apr 2008 - Apr 2013	15 (18.8)	0.02	
Operation Notes Period: Jun 2008 - May 2014	23 (29)	0.02	
Registry Data			
Structured Data			
Attributes	No. (%)	Average per encounter	
ICD-O-3 Period: -	-	-	

Administrative Data			
Structured Data			
Attributes	No. (%)	Average per encounter	
Sex	13 (100)	-	
Date of Birth	13 (100)	-	
Date of Death	3 (21.4)	-	
Diagnosis codes (ICD 10-GM) Period: Jan 2008 - May 2015	13 (100)	1	
Procedure codes (OPS) Period: Jan 2008 - May 2015	13 (100)	0.86	
Clinical Data			
Structured Data			
Attributes	No. (%)	Average per encounter	
Laboratory Period: Jan 2008 - Nov 2011	11 (84.6)	0.47	
Medication (ATC) Period: Jan 2008 - Oct 2012	13 (100)	0.27	
Unstructured Data			
Attributes	No. (%)	Average per encounter	
Pathology Reports Period: Apr 2008 - Mar 2013	3 (23.1)	0.02	
Operation Notes Period: Aug 2008 - Dec 2009	3 (23.1)	0.02	
Registry Data			
Structured Data			
Attributes	No. (%)	Average per encounter	
ICD-O-3 Period: -	-	-	

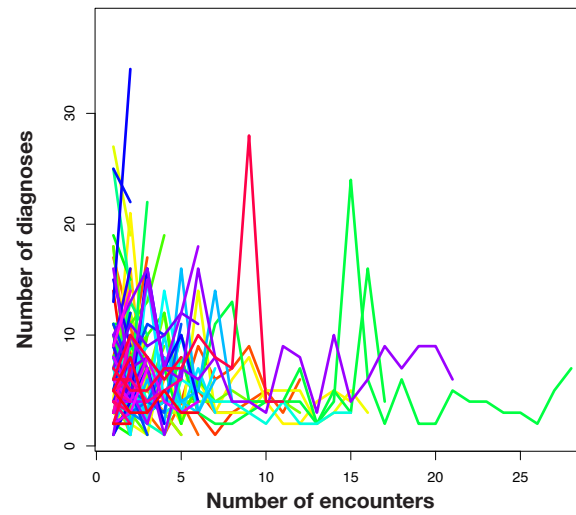
Description
Availability of attributes per patient and the average availability per encounter.

Fluctuating numbers of diagnoses per encounter

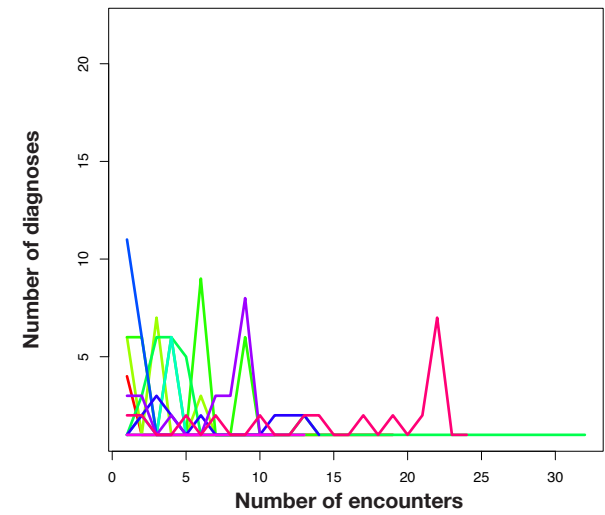
DPS Study



DG Study



DRO Study



Potential coding inconsistencies in chronic diseases and lifestyle factors - DPS Study

Chronic diseases

E10-E14 Diabetes mellitus

3 of 25 patient show inconsistency:

Patient ID	Encounter	Consistency
1182	6370	Coded
	6400	Not coded
985	6585	Not coded
	6758	Coded
994	6760	Not coded
	6813	Coded

G40.- Epilepsy

2 of 5 patient show inconsistency:

Patient ID	Encounter	Consistency
1084	6310	Coded
	6461	Coded
	6601	Coded
	6634	Not coded
	6648	Not coded
	6723	Not coded
	6857	Not coded
902	6388	Not coded
	6539	Coded
	6628	Not coded

Lifestyle

F10.- Mental and behavioural disorders due to use of alcohol

1 of 11 patient show inconsistency:

Patient ID	Encounter	Consistency
775	6618	Not coded
	6722	Not coded
	6771	Coded

F17.- Mental and behavioural disorders due to use of tobacco

2 of 4 patient show inconsistency:

Patient ID	Encounter	Consistency
784	6466	Coded
	6603	Not coded
1112	6358	Not coded
	6683	Not coded
	6812	Not coded
	6862	Coded

Overview of the eligible radiochemotherapies protocols - DRO Study

OPS:8-54: Chemotherapy

Patient ID	CODE	T1	T2	T3	T4	N
3	OPS:8-54	0	8	23	29	4
14	OPS:8-54	0	8	23	30	4
27	OPS:8-54	0	8	22	29	4
33	OPS:8-54	0	7	22	29	4
76	OPS:8-54	0	7	23	28	4
82	OPS:8-54	0	8	22	30	4
86	OPS:8-54	0	7	20	28	4
106	OPS:8-54	0	8	22	29	4
163	OPS:8-54	0	8	22	29	4
169	OPS:8-54	0	7	21	28	4
195	OPS:8-54	0	10	23	28	4
205	OPS:8-54	0	8	24	31	4
223	OPS:8-54	0	9	23	29	4

OPS:8-522: Radiotherapy

Patient ID	CODE	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T20	T21	T22	T23	T24	T25	T26	T27	T28	T29	T30	T31	T32	N
3	OPS:8-522	0	2	3	4	5	8	9	10	11	12	15	16	17	19	22	23	24	25	26	29	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21
14	OPS:8-522	0	2	3	6	7	8	9	10	13	14	15	16	17	20	22	23	24	27	28	29	30	31	34	35	36	37	38	41	42	43	44	NA	31
27	OPS:8-522	0	2	3	6	8	9	10	13	14	15	16	17	21	22	23	24	27	28	29	30	31	34	35	36	37	38	41	42	NA	NA	NA	NA	28
33	OPS:8-522	0	2	3	4	5	8	9	10	11	12	15	17	18	18	19	22	23	24	25	26	31	32	34	36	37	38	40	43	44	45	NA	NA	30
76	OPS:8-522	0	2	3	4	5	8	9	10	11	12	15	16	17	18	19	22	23	23	24	25	26	29	30	31	32	33	36	37	38	39	43	44	32
82	OPS:8-522	0	2	3	4	5	8	9	10	11	12	15	16	17	18	19	22	23	24	25	26	29	30	31	32	33	34	36	37	43	44	NA	NA	30
86	OPS:8-522	0	2	3	4	5	9	10	11	12	13	15	16	17	22	23	24	25	26	29	31	33	36	37	38	39	40	43	44	45	46	NA	NA	30
106	OPS:8-522	0	1	2	3	4	8	9	10	11	11	15	15	16	17	18	21	22	23	24	25	28	29	30	31	32	35	36	37	38	39	42	43	32
163	OPS:8-522	0	9	10	11	12	15	16	17	18	19	22	23	24	25	26	29	30	31	32	33	36	37	38	39	40	43	44	NA	NA	NA	NA	NA	27
169	OPS:8-522	0	2	3	4	5	8	9	10	11	12	15	16	17	18	19	22	23	24	25	26	29	30	31	32	33	37	38	39	40	43	44	NA	31
195	OPS:8-522	0	2	4	6	7	7	8	11	12	13	14	15	18	19	20	21	23	25	26	27	28	29	33	33	34	35	36	39	40	41	42	NA	31
205	OPS:8-522	0	2	3	4	5	8	9	10	11	12	15	16	17	18	19	22	23	24	25	26	29	30	31	32	33	36	37	38	39	39	40	NA	31
223	OPS:8-522	0	1	2	3	6	8	8	9	10	13	14	15	17	20	22	22	23	24	27	29	29	30	31	34	35	36	37	38	41	42	43	NA	31

Overview of assigned ICD:C25 throughout the encounters per patient ID - DRO Study

