



1^o OPTUM SUMMIT - RESEARCH ANALYTICS

What do we have, what we can do and areas of interest

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Analytics & AI, Amil

WHY do we have to do it

WHAT do we have

AREAS of interest

WHY do we have to do it

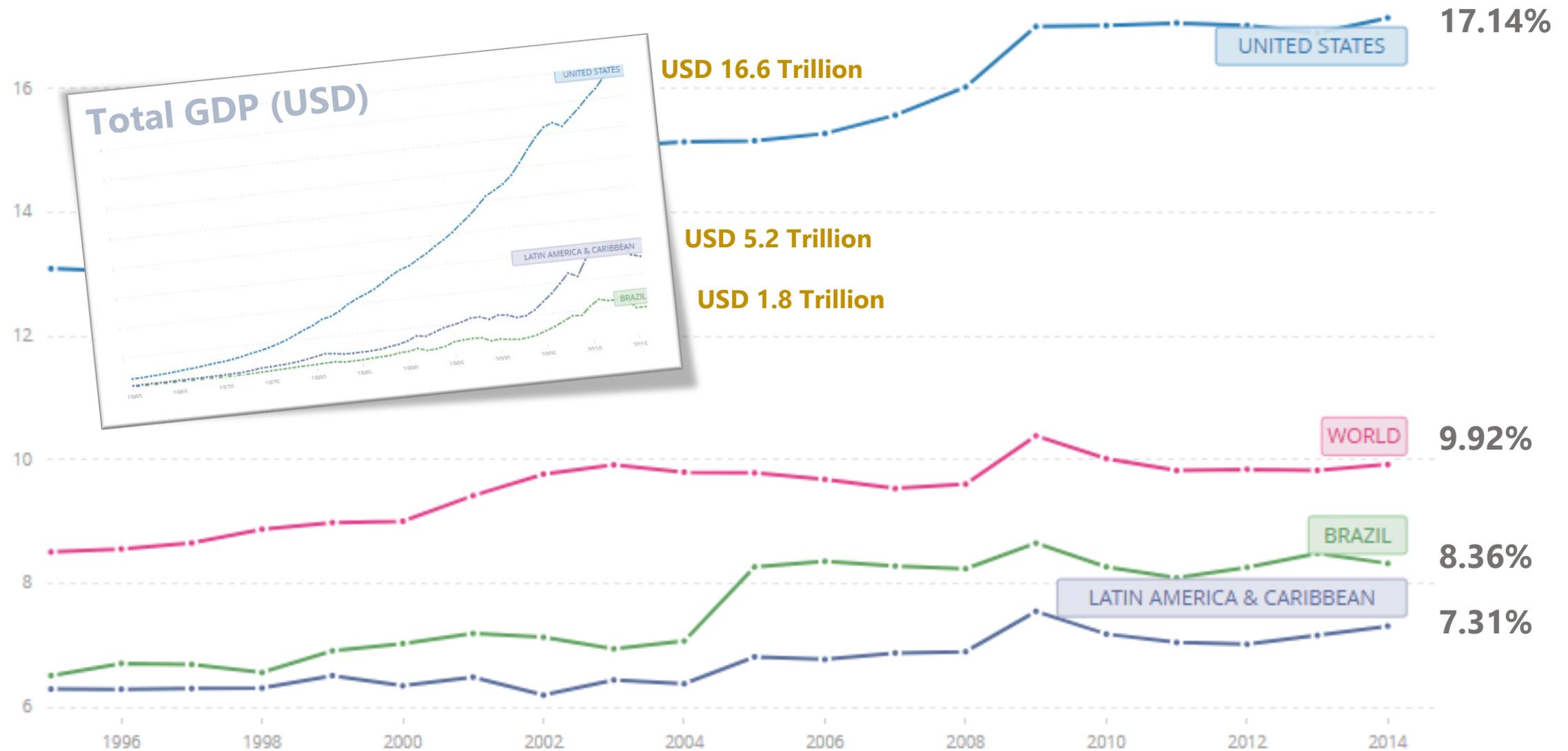
WHAT do we have

AREAS of interest

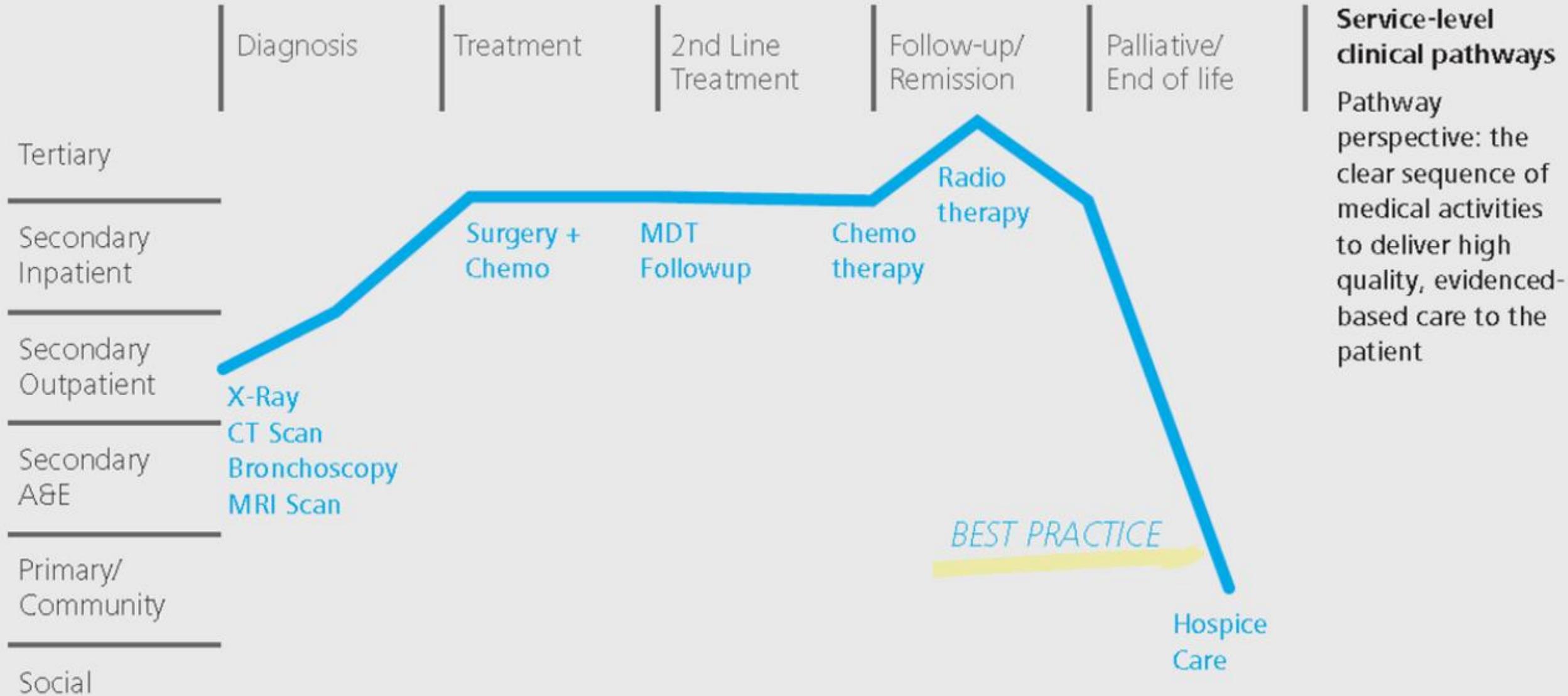
3

Health Expenditure as % of GDP

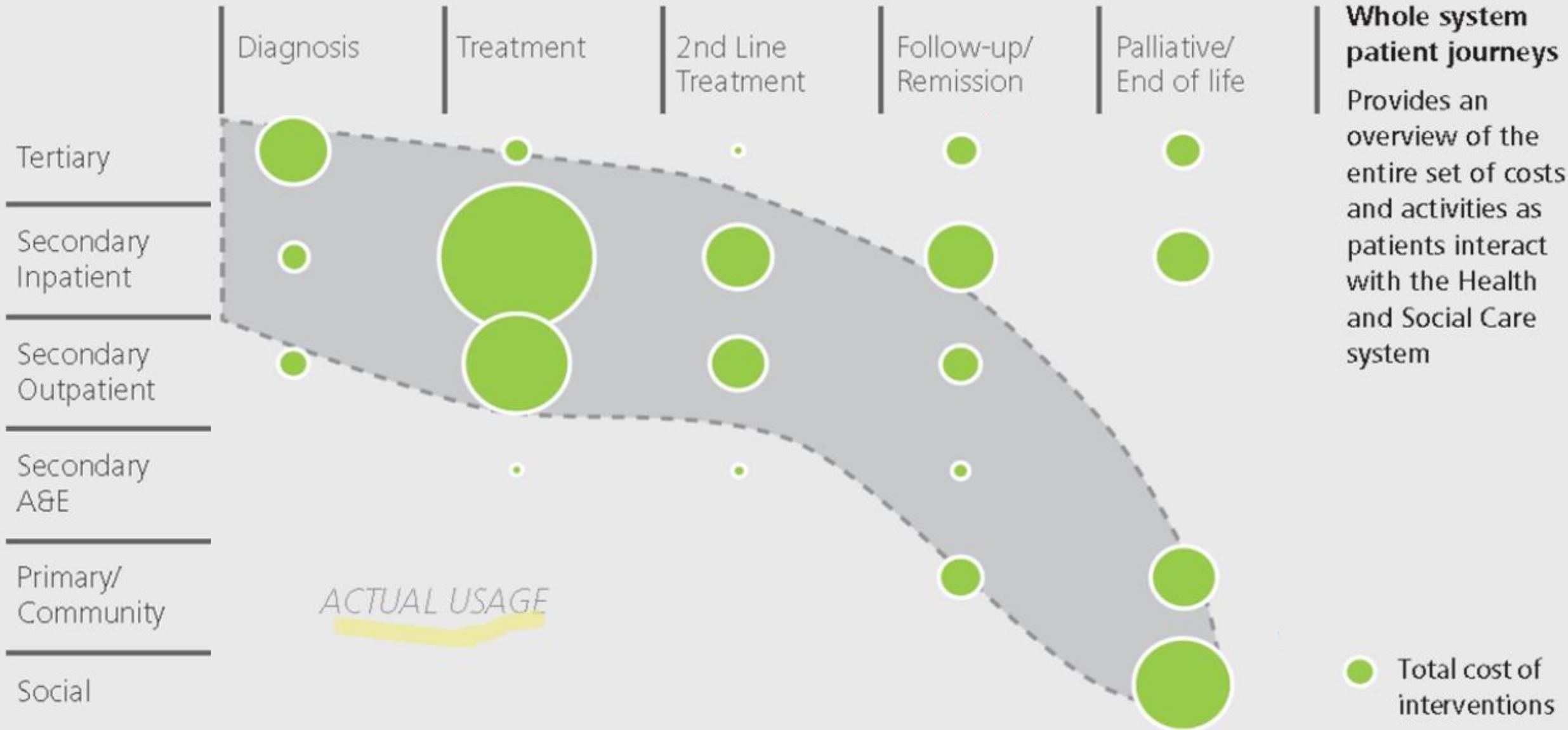
Source: World Bank, 2015

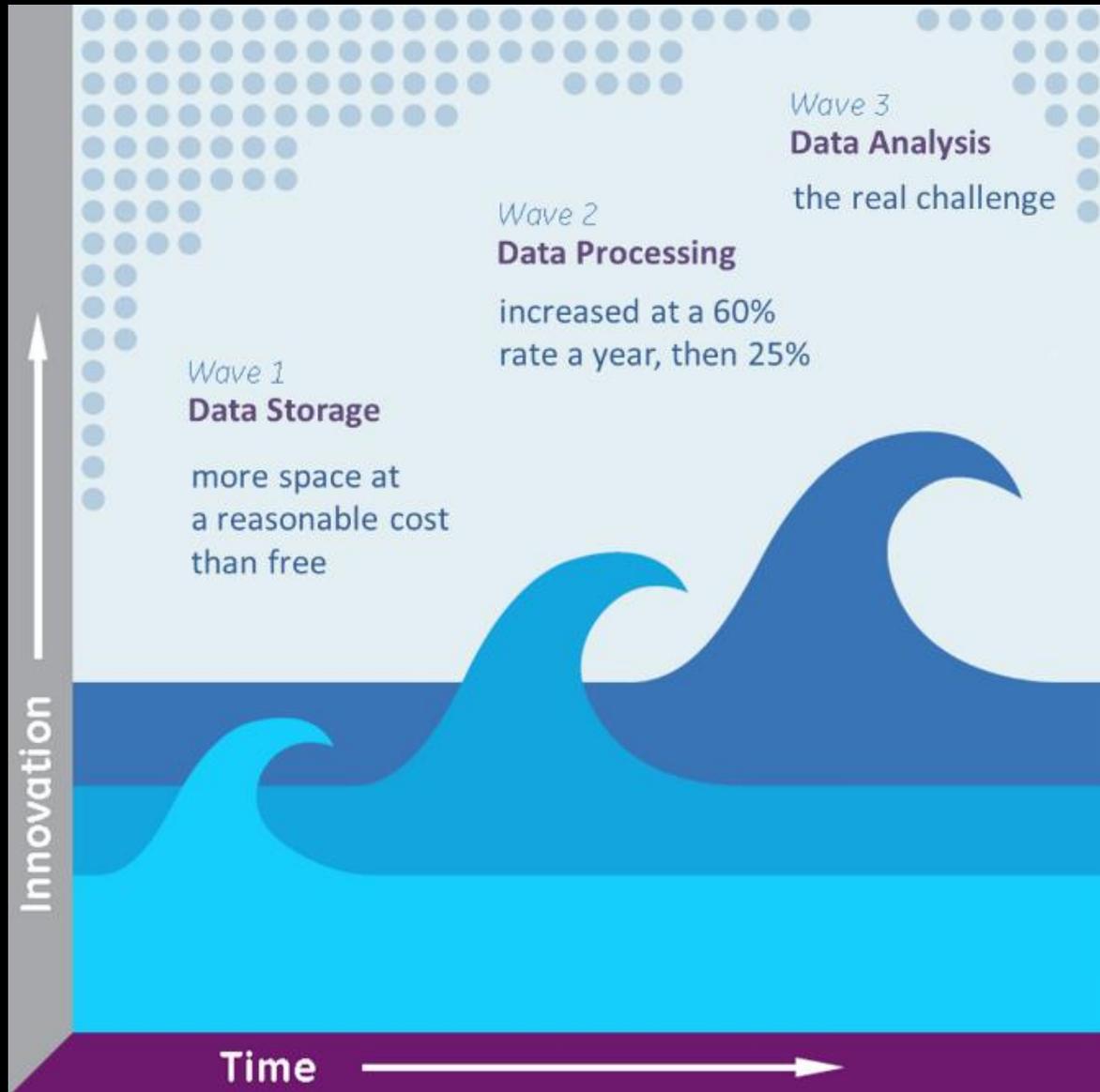


Clinical pathways



Patient activity journeys





WHY do we have to do it

WHAT do we have

AREAS of interest

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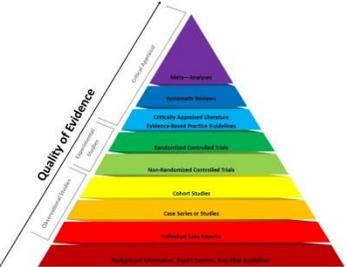
UNITEDHEALTH GROUP® Brasil



Some examples of What We are Developing

UNITEDHEALTH GROUP® Brasil

**Evidence Based
Medicine**



**Populational
Management**



**Primary Care
and Coordination of Care**



**Transition of Care
Post Hospital Care**



Quality Incentive Models

4 Million members in medical plans

Million members in dental plans **2**

361 Thousand corporate clients



24 million
Office Visits



21,651

Physician Offices
and Outpatient Clinics

67 million
OP Tests



6,832

Outpatient Ancillary
Services and Diagnostic Centers

510 thousand
IP Admissions



1,852

Hospitals and
Inpatient Facilities

HOW DO WE CAPTURE ALL OF THIS?



CLAIMS

Administrative data

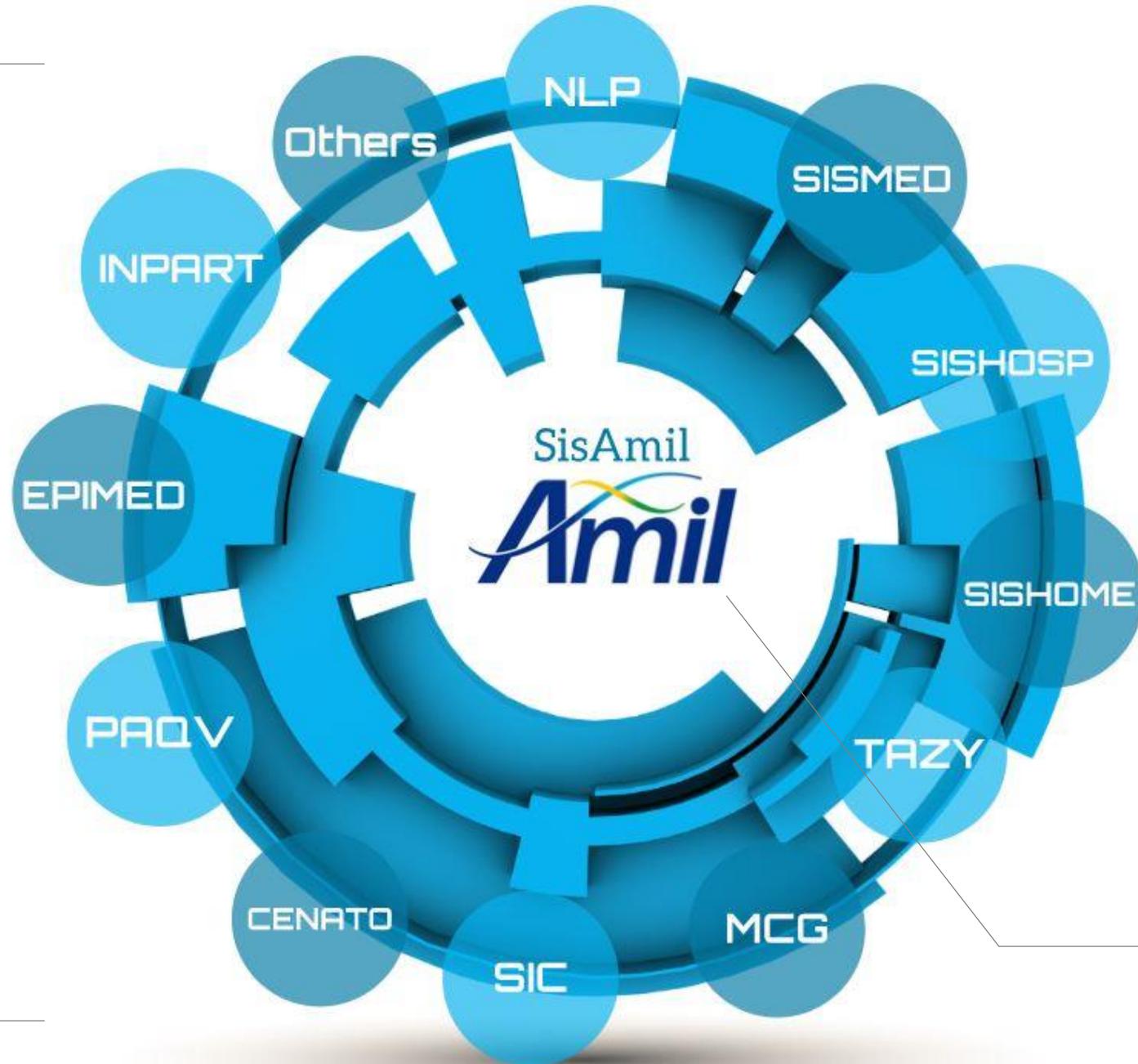
- Centralized
- Fairly Standardized, with limitations
- Mostly structured
- Reasonable quality, needs improvement
- Not restated
- Extremely poor in clinical info
- Owned = non-owned

PATIENTS

Clinical data

- Localized
- Locally, but not centrally, standardized
- A lot of useful info unstructured
- Reasonable quality, needs improvement
- Continually flowing
- Extremely rich in clinical info if you know where to dig
- EMR (Only owned + Satellite) + Own staff

Sattelite



Transactional
Operational



INPUTS



Data
Context
Knowledge/Experience

ETL



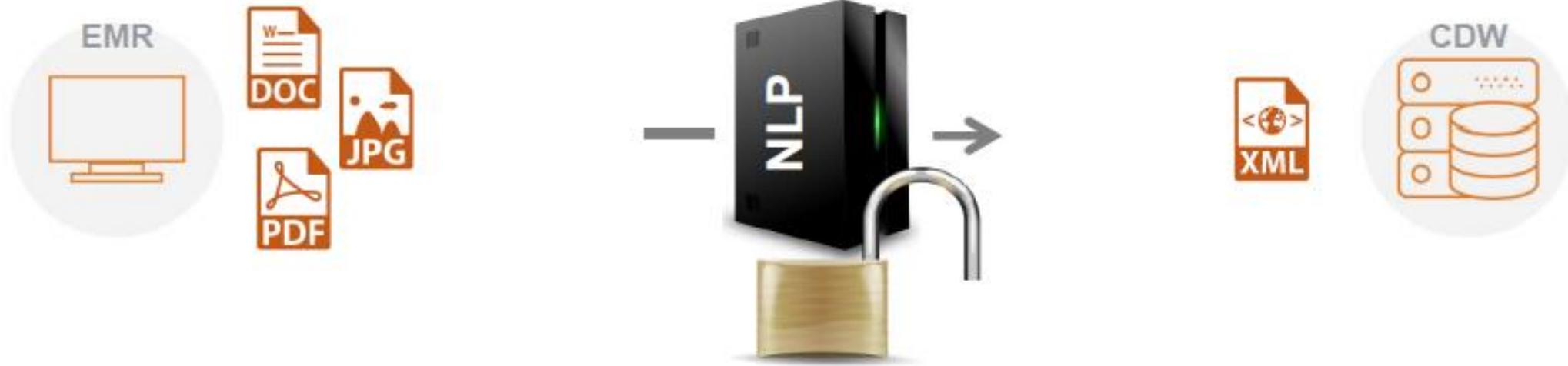
Analytics
Algorithms
Math models
Risk adjustments

OUTPUT

Medications	Diagnosis	Appointment	Advance Directive
Providers	Procedures	Immunizations	Family History
Clinical orders	Problems	Encounter	Allergy
Clinical results	Functional status	Locations	Vital signs
Clinical Terminology/Reference tables	Social History	Alerts	ADT/Patient Events

Subject Areas
Means to an End

Natural Language Processing **unlocks** your **unstructured data**



Transforming it into the
structured data
your analytics require

Conceitos Clínicos - Extração de Lab

sopros RCR em 3T (B4VE). BNF sem sopros MVUA, sem RA Abdome flácido, indolor, peristalse +, sem visceromegalias e/ou sopros MMII sem edemas, panturrilhas livres. Pulsos pediclos palpáveis laboratório 10/07/23 ht=42 hb=13 hc=4.94l=8.80/3/0/0/2/68/19/8 pl=231hbg=5.9glm=123gl=110 u=51 ct=1.37au=6.5na=141 k=3.9 13col=153
tgl=133hdl=55 ldl=71 na=109 16/05/22 gl=110
u=55 ct=1.33 au=7.3 na=142 13 ggt=13 col=150
tgl=175 hdl=52 ldl=63 na=107 1.7 Hom.air=3.59
TSH=6.49 t4l=0.9 19/11/21 TTGO gl=88 pós=60 ins=15.3 pós=22.3 hbg=5.2
gl=88 u=58 ct=1.29 au=6.8 na=145 k=3.9 tgp=14 tgo=19 falc=72 ggt=12
bt=0.2 col=148 tgl=125 hdl=69 ldl=54 vldl=25 cpk=61 tsh=0.27 t4l=1.7
03.09.21 Hglic: 6.1 gJ: 109 U: 50 Cr: 1.19 AU: 6.3 K+: 4.5 CT: 159 HDL: 54 LDL: 73
Tgl: 159 TGP: 18 TGO: 18 CPK: 138 T4L: 1.0 TSH: 4.41 anti-Tireoglobulina: 159.1
TPO: 204.3 22.07.21 Ht: 48.2% Hg: 15.7 Leuco: 8600 Plaq: 219 Hglic: 5.7 gJ: 107 U:
45 Cr: 1.19 AU: 6.5 Na+: 142 K+: 4.4 TSH: 9.55 T4L: 0.8 CT: 278 HDL: 45 LDL: 175
Tgl: 406 TGP: 17 TGO: 19 FA: 110 GGT: 15 BBT: 0.4 Exames USG 05/04/22 tx
heterognea -áreas nod esparsas fibróticas -sugestivo de dc autoimune -nód
hipoecóico . bem limitado . cont reg. sem halo sem micro 1.1x0.5cm 1/3 sup LD
gl=87 chammas II ir 0.59 ETT (27.08.21): AO: 3.3 AE: 3.9 S: 0.9 PP: 0.9 VEd: 5.3
VEs: 3.0 FE: 74% FSPVE sem alt. segmentar. Deficit relaxamento. Espessamento
valvar M / AO. IM minima Redundncia SIA sem shunt. Pericardio N - Doppler
Carótidas / Vertebrais (27.08.21): bifurcação <20% bilateral. CIE 20 a 30%.
CMI 1.3mm CCE / 1.0mm CCD. AA Vertebrais N Imp/cond Mantneho
medicação- continuo estimulando MEV-trok g creme- tobradex pomadapiora da

Unstructured Text
Hglic

CREATININE (mg/dL): 1.19
CREATININE (mg/dL): 1.19
GGT (U/L): 12.0
GGT (U/L): 13.0
GGT (U/L): 15.0
HbA1c (%): 5.7
HbA1c (%): 6.1
HDL (mg/dl): 45.0
HDL (mg/dl): 52.0
HDL (mg/dl): 54.0
HDL (mg/dl): 55.0
HDL (mg/dl): 69.0
HDL (mg/dl): 98.0
LDL (mg/dl): 175.0
LDL (mg/dl): 54.0
LDL (mg/dl): 71.0
LDL (mg/dl): 73.0
NON-HDL (mg/dl): 98.0
PLATELETS (per mm3): 219000.0
POTASSIUM (mEq/L): 3.9
POTASSIUM (mEq/L): 4.2
POTASSIUM (mEq/L): 4.8
TRIGLICERÍDEOS (mg/dL): 159.0
TRIGLICERÍDEOS (mg/dL): 406.0

NLP Results
HbA1c



Conceitos Clínicos - Extração de Lab

sopros RCR em 3T (B4VE), BNF sem sopros MVUA, sem RA Abdome flácido.
irritável, persiste +, sem visceromegalias e fômites sopros MMII sem edemas.
Pantufas livres. Pulso radiais de fraca amplitude. Laboratório 0/07/23 ht=42
hb=11.1 g/dl hct=33.1% hgb=5.9 g/dl m=123 gl=110 u=51
c=1.37 au=6.5 na=142 k=3.9 tgp=21 tgo=20 falc=76 ggt=13 col=153
tql=133 hdl=55 ldl=119 vldl=98 cpk=131 tsh=4.44 t4l=0.9 16/05/22 gl=110
u=55 ct=1.33 au=7.3 na=148 k=4.8 tgp=20 tgo=20 falc=63 ggt=13 col=150
tgl=175 hdl=52 ldl=63 não hdl=98 iNS=13.4 hOMA-b=101.7 Hom.air=3.59
TSH=6.49 t4l=0.9 19/11/21 TTGO gl=88 pós=60 ins=15.3 pós=22.3 hbg=5.2
gl=88 u=58 ct=1.29 au=6.8 na=145 k=3.9 tgp=14 tgo=19 falc=72 ggt=12
bt=0.2 col=148 tq=125 hdl=69 ldl=54 vldl=25 cpk=61 tsh=0.27 t4l=1.7
03.09.21 Hglic: 6.1 g: 109 U: 50 Cr: 1.19 AU: 6.3 K+: 4.5 CT: 159 HDL: 54 LDL: 73
Tgl: 159 TGP: 18 TGO: 18 CPK: 138 T4L: 1.0 TSH: 4.41 anti-Tireoglobulina: 159.1
TPO: 204.3 22.07.21 Ht: 48.2% Hg: 15.7 Leuco: 8600 Plaq: 219 Hglic: 5.7 g: 107 U:
45 Cr: 1.19 AU: 6.5 Na+: 142 K+: 4.4 TSH: 9.55 T4L: 0.8 CT: 278 HDL: 45 LDL: 175
Tgl: 406 TGP: 17 TGO: 19 FA: 110 GGT: 15 BBT: 0.4 Exames USG 05/04/22 tx
Hígado: sem alterações. Bexiga: sem alterações. Tireoide: nódulo de dc autoimune -nód
Hígado: sem alterações. Bexiga: sem alterações. Tireoide: nódulo de dc autoimune -nód
Hígado: sem alterações. Bexiga: sem alterações. Tireoide: nódulo de dc autoimune -nód
g: 107 U: 45 Cr: 1.19 AU: 6.5 Na+: 142 K+: 4.4 TSH: 9.55 T4L: 0.8 CT: 278 HDL: 45 LDL: 175
V: 45 Cr: 1.19 AU: 6.5 Na+: 142 K+: 4.4 TSH: 9.55 T4L: 0.8 CT: 278 HDL: 45 LDL: 175
v: 45 Cr: 1.19 AU: 6.5 Na+: 142 K+: 4.4 TSH: 9.55 T4L: 0.8 CT: 278 HDL: 45 LDL: 175
C: 1.19 AU: 6.5 Na+: 142 K+: 4.4 TSH: 9.55 T4L: 0.8 CT: 278 HDL: 45 LDL: 175
medicação- continuo estimulando MEV-trok g creme- tobradex pomadapiora da

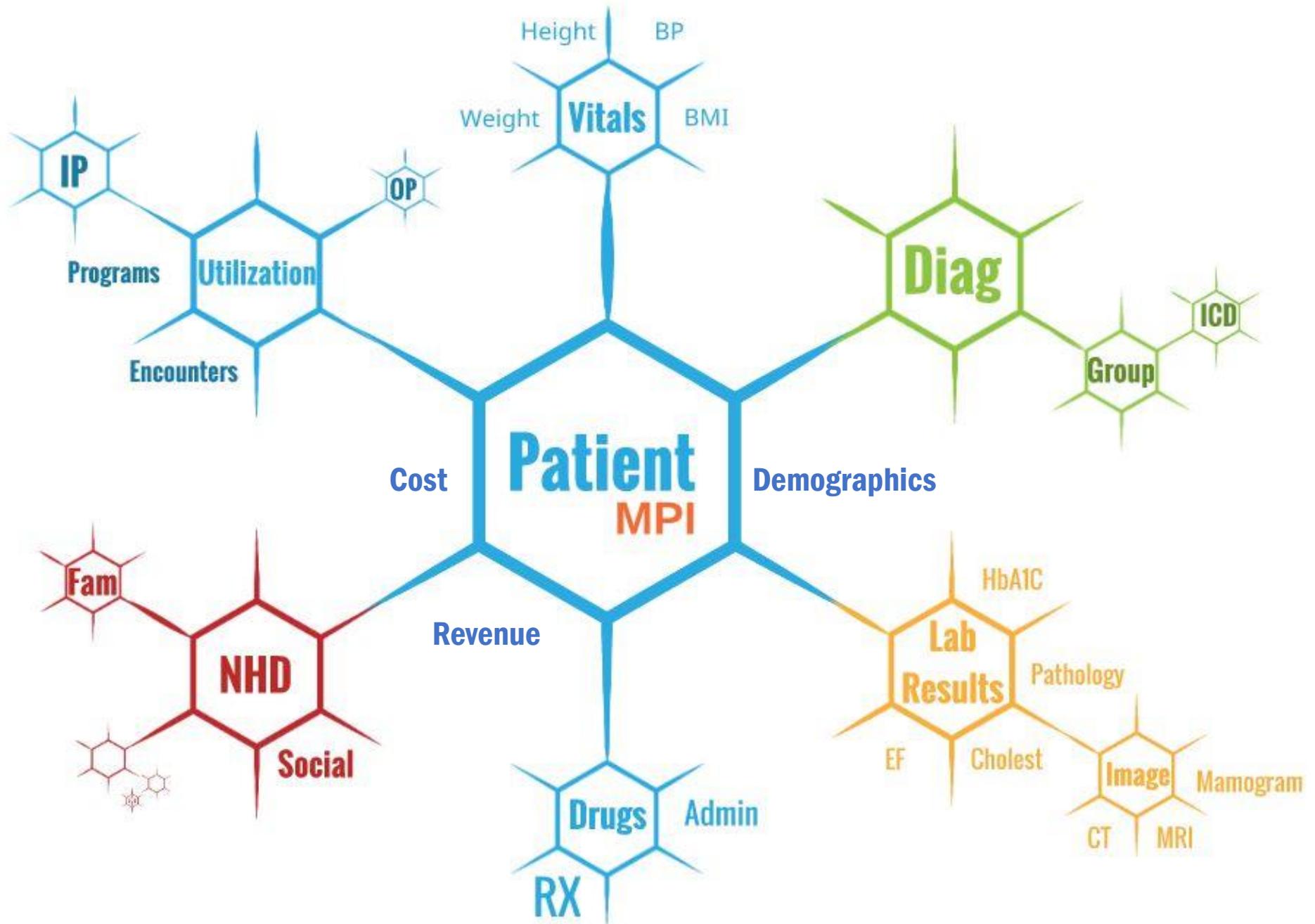
Unstructured Text
dates

Structured Lab Data
tracked by type, value
and date

CREATININE (mg/dL): 1.19
CREATININE (mg/dL): 1.19
GGT (U/L): 12.0
GGT (U/L): 13.0
GGT (U/L): 15.0
HbA1c (%): 5.7
HbA1c (%): 6.1
HDL (mg/dl): 45.0
HDL (mg/dl): 52.0
HDL (mg/dl): 54.0
HDL
HDL
HDL
LDL
LDL
LDL
LDL
LDL
LDL
NON
PLAT
POT
POTASSIUM (mEq/L): 4.2
POTASSIUM (mEq/L): 4.8
TRIGLICERÍDEOS (mg/dL): 159.0
TRIGLICERÍDEOS (mg/dL): 406.0

XML Output

```
<lab="HbA1c (%)" value="5.7"  
date="2021-07-22"  
...  
<lab="HbA1c (%)" value="6.1"  
date="2021-09-03"  
...
```



WHY do we have to do it

WHAT do we have

AREAS of interest

Selected population :: Stratification

High Cost High Risk Category :: Group			% Cost	# Users	% Users	Idade (Avg)
Não classificado	H00	Not rated	3,5%	1.607.667	42,4%	29
	Total		3,5%	1.607.667	42,4%	29
H1	H11	Very High Cost, Very High Frequency	20,2%	8.795	0,2%	53
	H12	Very High Cost, Low-Mid Frequency	1,3%	518	0,0%	41
	Total		21,5%	9.313	0,2%	52
H2	H21	Very Cost, Very Frequency	19,6%	49.416	1,3%	48
	H22	Mid Cost, High Frequency	19,7%	203.814	5,4%	43
	Total		39,3%	253.230	6,7%	44
H3	H31	High Cost, Low-Mid Frequency	2,0%	5.373	0,1%	46
	H32	Mid Cost, Low-Mid Frequency	3,3%	36.537	1,0%	40
	Total		5,3%	41.910	1,1%	41
H4	H41	Low Cost, High Frequency	20,0%	933.072	24,6%	34
	H42	Low Cost, Mid Frequency	9,9%	809.793	21,3%	34
	Total		29,8%	1.742.865	45,9%	34
H5	H51	Low-no Cost, Low-No Freq, Multiple conditions	0,1%	17.530	0,5%	52
	H52	Low-no Cost, Low-No Freq, No conditions, > 65 yo	0,1%	40.473	1,1%	73
	H53	Low-no Cost, Low-No Freq, Selected conditions	0,0%	705	0,0%	49
	H54	Low-no Cost, Low-No Freq, Stable chronic	0,3%	82.003	2,2%	39
	Total		0,6%	140.711	3,7%	49
Total			100,0%	3.795.696	100,0%	34

Prioritized areas of interest

Oncology

Incidence/Prevalence
Disease Stage
Complexity
Treatment/Drugs
Total Cost of Care by type of
Condition and over time

Autoimmune

Biologic drugs
Treatments
Total Cost of Care by type of
Condition and over time
Complications

Metabolic

Diabetes
HbA1c Results over time
Total Cost of Care by type of
Condition and over time
Treatment/Drugs

Cardiology

Anticoagulation
Blood Pressure Control
LDL Control
CHF (EF%)
Cerebrovascular Disease

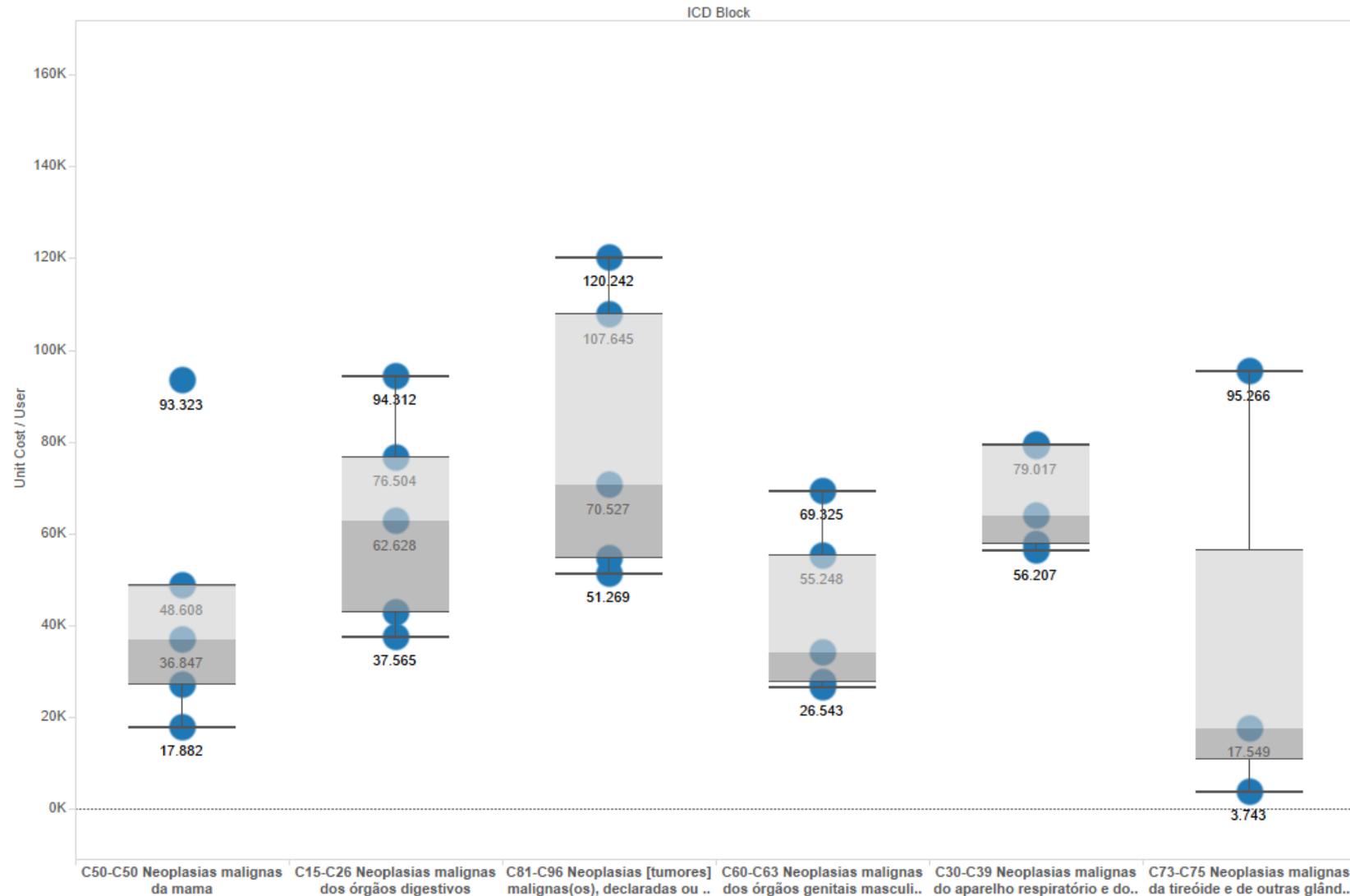
Renal

CKD
Treatment
Total Cost of Care by type of
Condition and over time
Complications

Infectious

Pneumonia, Sepsis
Admission Rate
Total Cost over Time
Complications/Severity
Outcomes post Hospital
Admission

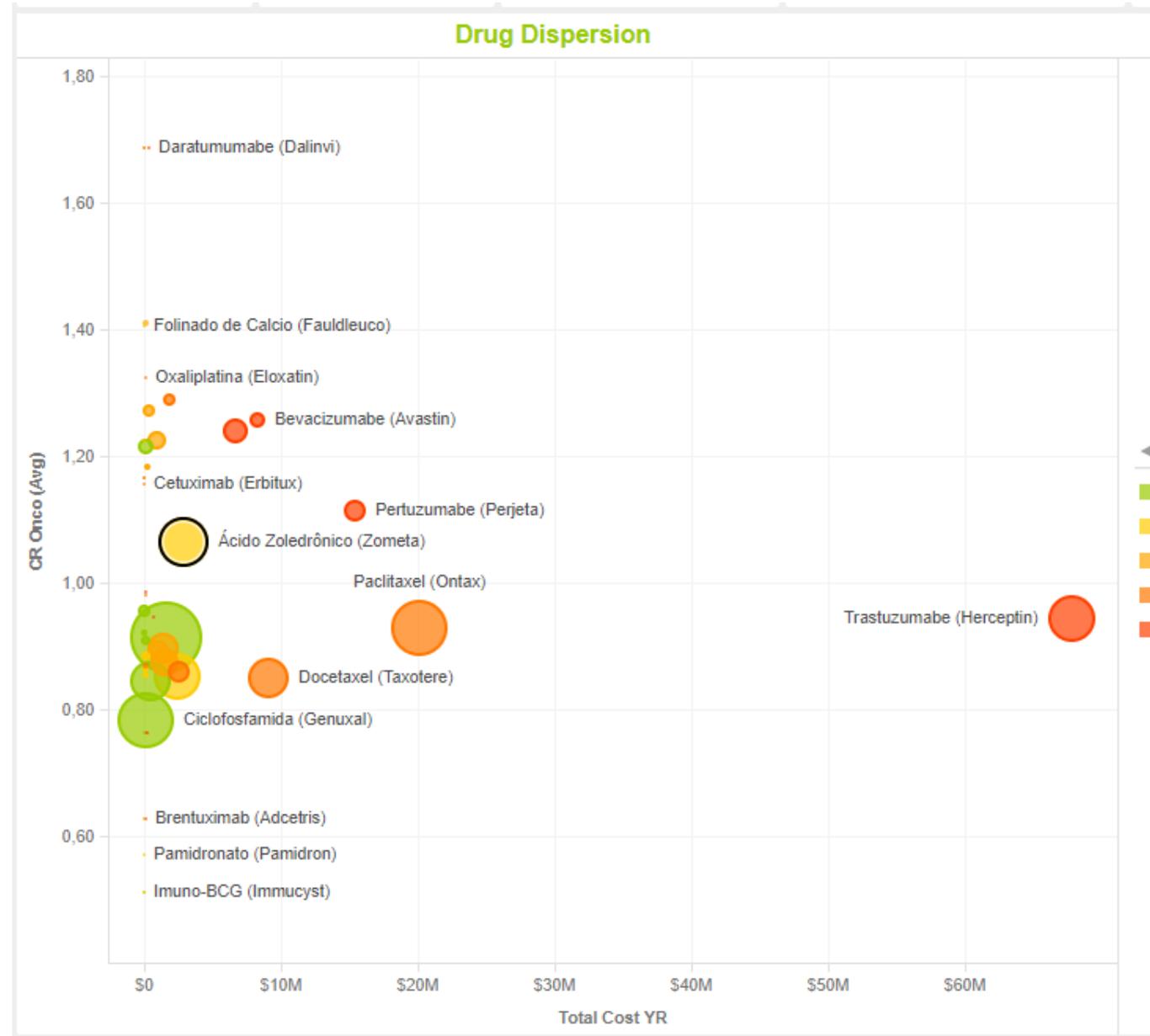
Unit cost per member per year :: Box Plot



Breast Cancer per stage :: Prevalence and Unit Cost

C50-C50 Neoplasias malignas da mama	Members		Unit Cost \$ / 12m		Prevalence Rate/100 mbr*	Incidência
	Qty	%	Oncology (QT/RT)	Total Cost		
	3.670	100%	R\$ 33.961	R\$ 52.155	171	72,9
I	1.053	29%	R\$ 17.687	R\$ 31.173	49	20,9
II	1.178	32%	R\$ 26.971	R\$ 40.429	55	23,4
III	630	17%	R\$ 34.707	R\$ 52.497	29	12,5
IV	660	18%	R\$ 72.463	R\$ 109.663	31	13,1
Outros/NI	149	4%	R\$ 30.526	R\$ 36.956	7	3,0

C50-C50 Neoplasias malignas da mama	Members		Unit Cost \$ / 12m		Prevalence Rate/100 mbr*	Incidência
	Qty	%	Oncology (QT/RT)	Total Cost		
	3670	100%	R\$ 33.964	R\$ 51.869	171	72,9
2 - de 1 a 1,99	1023	28%	R\$ 16.628	R\$ 28.698	48	20,3
3 - de 2 a 2,99	1281	35%	R\$ 25.788	R\$ 37.980	60	25,5
4 - de 3 a 3,99	590	16%	R\$ 32.486	R\$ 48.561	27	11,7
5 - de 4 a 4,99	776	21%	R\$ 71.418	R\$ 107.827	36	15,4

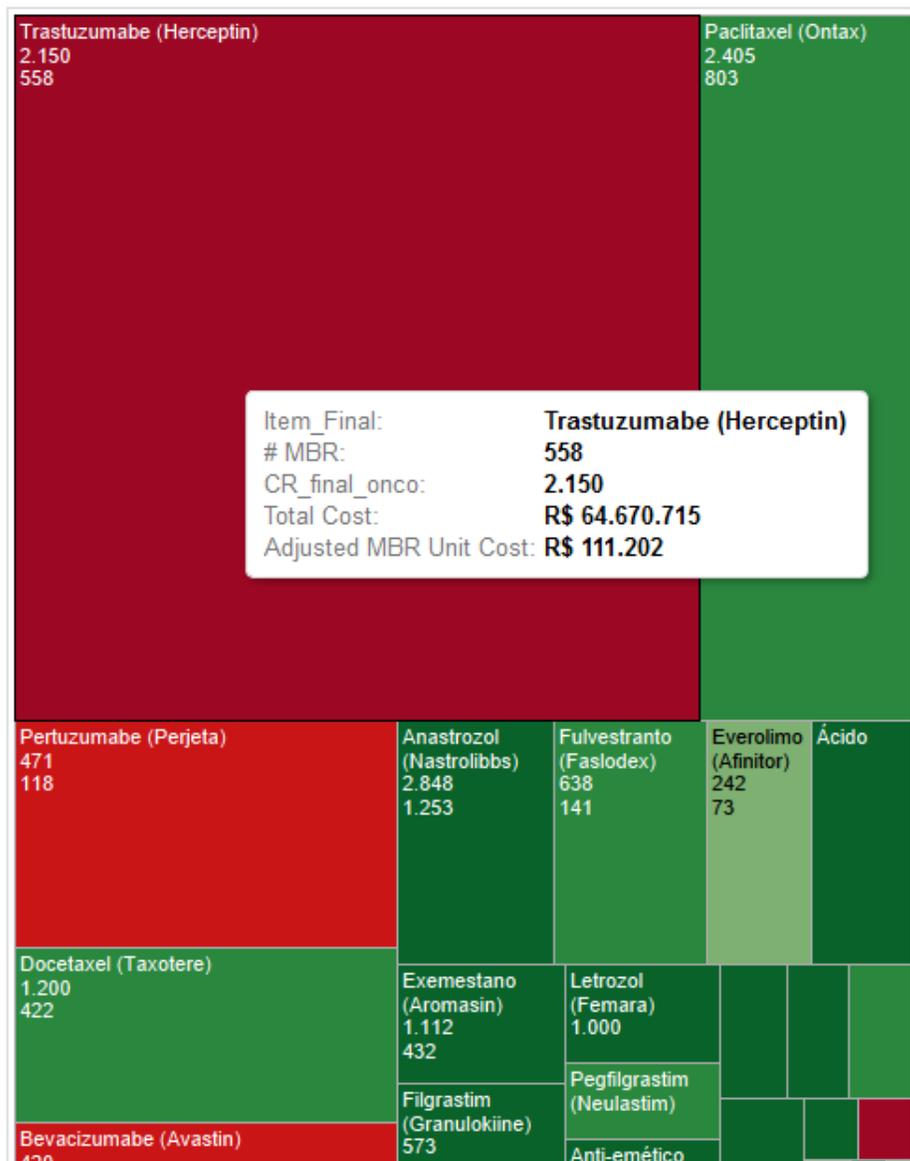


Available
per stage,
Age, location,
Provider, etc.

ICD Codes

ICD Block	Tipo Custo		
		Drogas/QT	Total geral
C50-C50 Neoplasias malignas da mama	Total Cost	R\$ 13.176.189	R\$ 13.176.189
	% Cost	100%	100%
	# MBR	712	712
	Unit Cost / User	R\$ 18.506	R\$ 18.506
	Age (Median)	55	55
C15-C26 Neoplasias malignas dos órgãos digestivos	Total Cost	R\$ 11.464.376	R\$ 11.464.376
	% Cost	100%	100%
	# MBR	243	243
	Unit Cost / User	R\$ 47.179	R\$ 47.179
	Age (Median)	61	61
C81-C96 Neoplasias [tumores] malignas(os), declaradas ou presumidas como primárias, dos tecidos linfático, hematopoét..	Total Cost	R\$ 5.506.601	R\$ 5.506.601
	% Cost	100%	100%
	# MBR	94	94
	Unit Cost / User	R\$ 58.581	R\$ 58.581
	Age (Median)	56	56
C30-C39 Neoplasias malignas do aparelho respiratório e dos órgãos intratorácicos	Total Cost	R\$ 4.467.640	R\$ 4.467.640
	% Cost	100%	100%
	# MBR	86	86
	Unit Cost / User	R\$ 51.949	R\$ 51.949
	Age (Median)	64	64
C69-C72 Neoplasias malignas dos olhos, do encéfalo e de outras partes do sistema nervoso central	Total Cost	R\$ 3.251.799	R\$ 3.251.799
	% Cost	100%	100%
	# MBR	24	24
	Unit Cost / User	R\$ 135.492	R\$ 135.492
	Age (Median)	51	51
C60-C63 Neoplasias malignas dos órgãos genitais masculinos	Total Cost	R\$ 3.011.513	R\$ 3.011.513
	% Cost	100%	100%
	# MBR	71	71
	Unit Cost / User	R\$ 42.416	R\$ 42.416

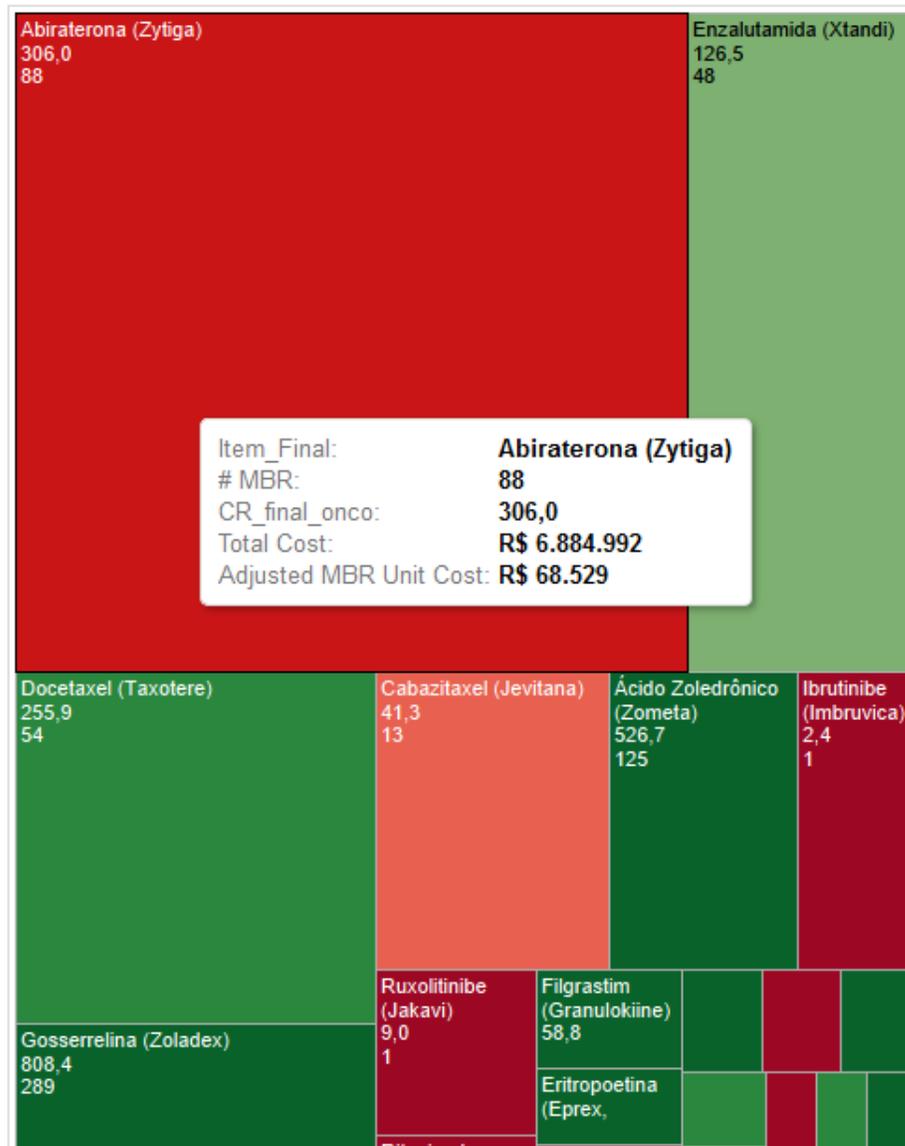
Provider Drug Map



ICD Codes

ICD Block		Tipo Custo	
		Drogas/QT	Total geral
C50-C50 Neoplasias malignas da mama	Total Cost	R\$ 13.176.189	R\$ 13.176.189
	% Cost	100%	100%
	# MBR	712	712
	Unit Cost / User	R\$ 18.506	R\$ 18.506
	Age (Median)	55	55
C15-C26 Neoplasias malignas dos órgãos digestivos	Total Cost	R\$ 11.464.376	R\$ 11.464.376
	% Cost	100%	100%
	# MBR	243	243
	Unit Cost / User	R\$ 47.179	R\$ 47.179
	Age (Median)	61	61
C81-C96 Neoplasias [tumores] malignas(os), declaradas ou presumidas como primárias, dos tecidos linfático, hematopoét..	Total Cost	R\$ 5.506.601	R\$ 5.506.601
	% Cost	100%	100%
	# MBR	94	94
	Unit Cost / User	R\$ 58.581	R\$ 58.581
	Age (Median)	56	56
C30-C39 Neoplasias malignas do aparelho respiratório e dos órgãos intratorácicos	Total Cost	R\$ 4.467.640	R\$ 4.467.640
	% Cost	100%	100%
	# MBR	86	86
	Unit Cost / User	R\$ 51.949	R\$ 51.949
	Age (Median)	64	64
C69-C72 Neoplasias malignas dos olhos, do encéfalo e de outras partes do sistema nervoso central	Total Cost	R\$ 3.251.799	R\$ 3.251.799
	% Cost	100%	100%
	# MBR	24	24
	Unit Cost / User	R\$ 135.492	R\$ 135.492
	Age (Median)	51	51
C60-C63 Neoplasias malignas dos órgãos genitais masculinos	Total Cost	R\$ 3.011.513	R\$ 3.011.513
	% Cost	100%	100%
	# MBR	71	71
	Unit Cost / User	R\$ 42.416	R\$ 42.416

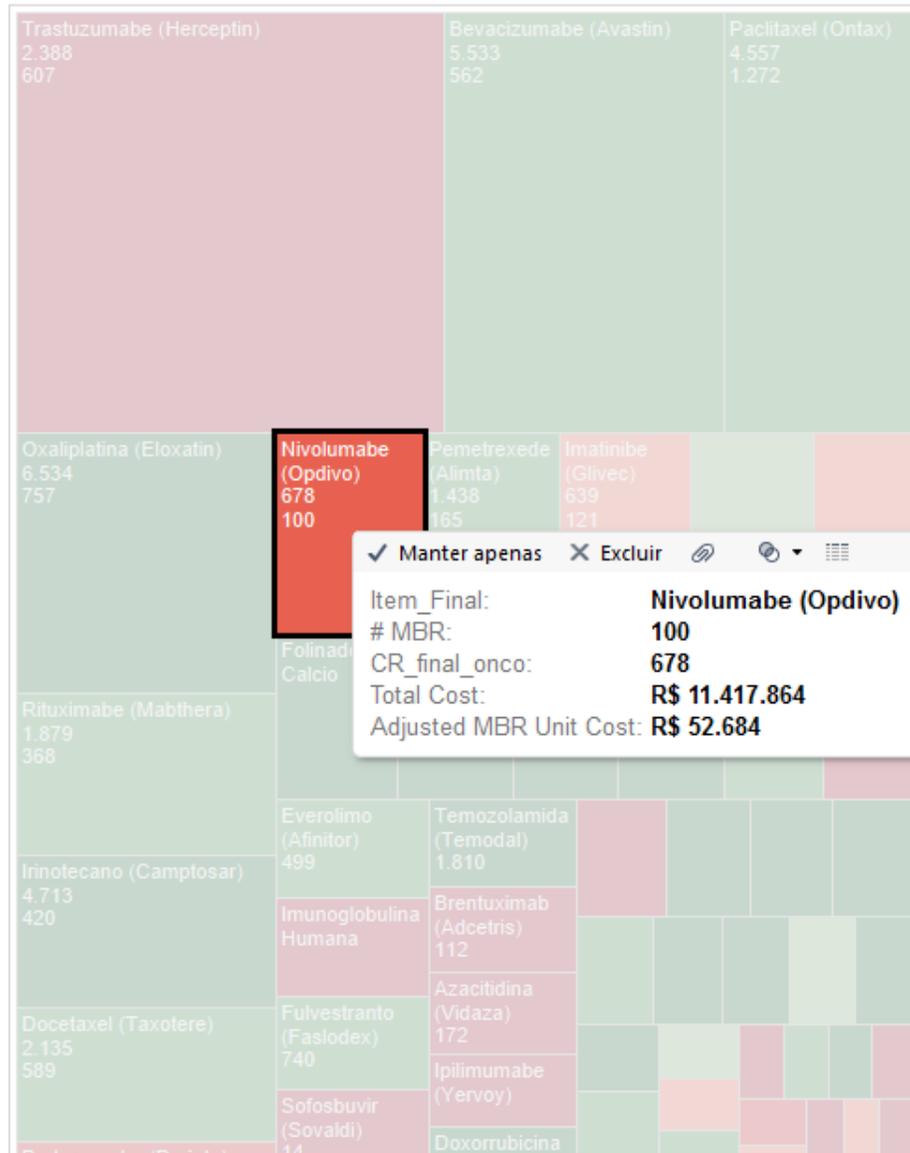
Provider Drug Map



ICD Codes

ICD Block	Tipo Custo		
	Drogas/QT	Total geral	
C30-C39 Neoplasias malignas do aparelho respiratório e dos órgãos intratorácicos	Total Cost	R\$ 958.381	R\$ 958.381
	% Cost	100%	100%
	# MBR	8	8
	Unit Cost / User	R\$ 119.798	R\$ 119.798
	Age (Median)	70	70
C43-C44 Melanoma e outras(os) neoplasias malignas da pele	Total Cost	R\$ 290.201	R\$ 290.201
	% Cost	100%	100%
	# MBR	2	2
	Unit Cost / User	R\$ 145.101	R\$ 145.101
	Age (Median)	51	51
[Não Informado]	Total Cost	R\$ 286.619	R\$ 286.619
	% Cost	100%	100%
	# MBR	1	1
	Unit Cost / User	R\$ 286.619	R\$ 286.619
	Age (Median)	81	81
C15-C26 Neoplasias malignas dos órgãos digestivos	Total Cost	R\$ 112.856	R\$ 112.856
	% Cost	100%	100%
	# MBR	1	1
	Unit Cost / User	R\$ 112.856	R\$ 112.856
	Age (Median)	87	87
C45-C49 Neoplasias malignas do tecido mesotelial e tecidos moles	Total Cost	R\$ 107.482	R\$ 107.482
	% Cost	100%	100%
	# MBR	1	1
	Unit Cost / User	R\$ 107.482	R\$ 107.482
	Age (Median)	20	20
Total geral	Total Cost	R\$ 1.755.539	R\$ 1.755.539
	% Cost	100%	100%
	# MBR	13	13
	Unit Cost / User	R\$ 135.041	R\$ 135.041

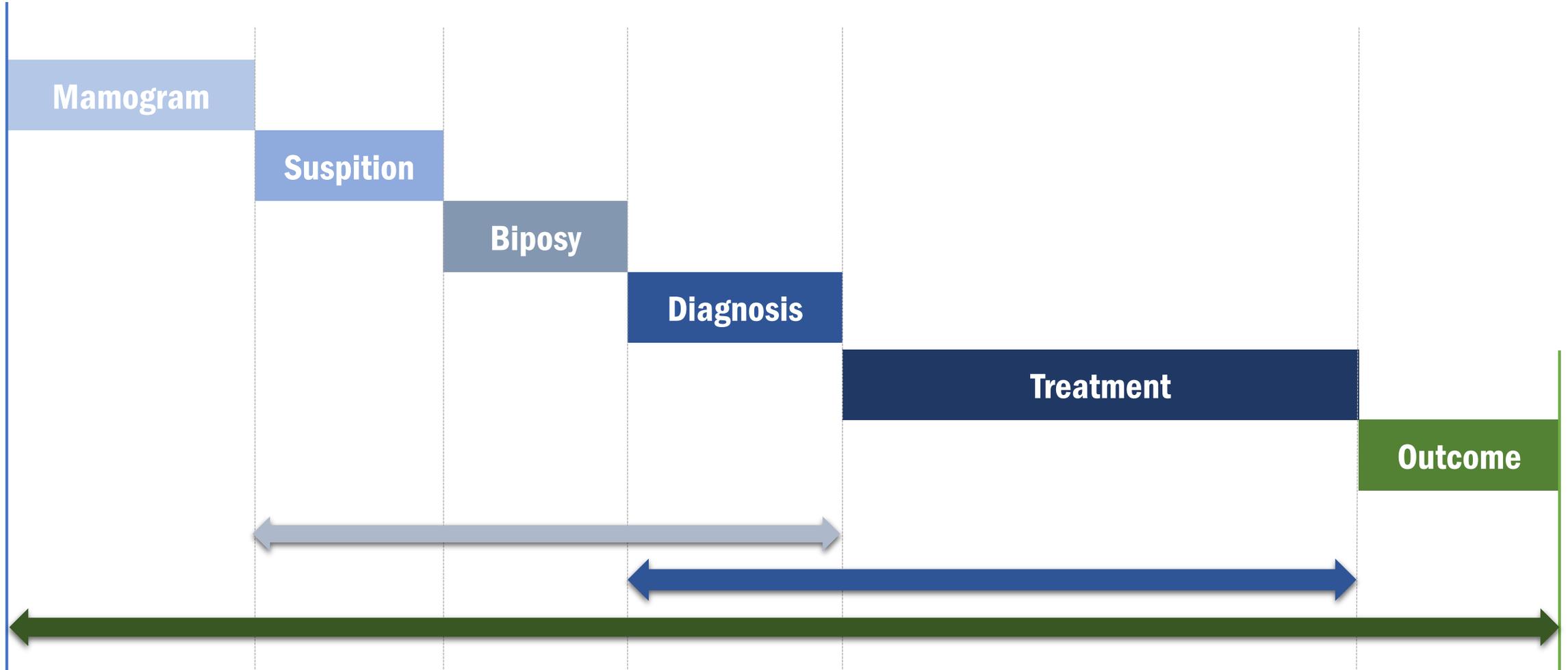
Provider Drug Map



Mamograms per 10,000 women / yr

UF Benef.	Faixa Etária					Pop Fem				
	>=49	39-48	29-38	19-28	<19	>=49	39-48	29-38	19-28	<19
AL	5.372	5.200	1.227	14	8,9	1.935	1.780	2.499	1.317	2.143
AM	4.740	4.179	347	9	0,0	1.065	1.171	1.902	1.216	1.912
BA	4.190	4.699	790	95	3,4	5.760	5.590	7.438	3.939	6.093
CE	4.944	4.387	255	10	9,2	4.027	2.880	4.318	2.907	3.104
DF	3.707	4.087	576	53	10,3	24.743	19.129	26.248	16.662	23.700
GO	4.347	4.479	606	49	4,0	2.325	1.801	2.874	2.240	2.433
MA	4.808	4.491	248	42	0,0	1.494	1.369	2.053	1.158	1.837
MG	4.583	4.108	705	39	4,4	4.766	5.666	9.412	6.796	8.545
NI	4.079	4.522	523	34	6,1	3.054	1.473	1.525	1.113	3.004
PA	4.366	3.752	443	47	0,0	517	360	520	420	452
PB	5.830	4.237	438	31	0,0	321	313	600	310	412
PE	4.666	4.352	467	15	6,3	14.032	12.685	18.618	11.501	17.236
PI	341	530	47	0	0,0	1.060	451	637	512	629
PR	4.545	4.500	1.093	142	4,2	16.748	13.842	21.963	14.135	22.718
RJ	4.488	4.361	732	60	5,2	114.241	68.597	89.103	61.515	94.639
RN	4.833	4.559	569	23	2,6	10.187	7.482	10.452	5.437	10.519
RR	2.286	3.636	0	0	0,0	9	4	7	5	6
RS	4.570	4.415	1.031	101	0,0	1.306	1.197	1.871	1.190	1.579
SC	2.605	1.959	217	15	0,0	1.487	2.715	3.885	2.986	5.560
SP	4.849	4.650	788	52	6,6	232.460	186.159	258.230	178.859	257.326
Total	4.642	4.506	748	55	6,1	442.552	335.865	466.390	316.479	466.217

Oncologic patient's journey – from suspicion to outcome



Prostate Cancer cohort

Metrics	(3) 2+ PSA valid results with valid date	(a) Variation above or equal 10% per month, *V1>0.01	(b) Variation above or equal 10% per month, *V1<0.01	(c) Variation below 10% per month
# Patients	2,630	706	275	1,649
% of total	28,1%	26,8%	10,5%	62,7%
Age (mean)	68	71	69	67
% Metastasis	2,9%	7,2%	2,9%	1,0%
% ADT	16,6%	29,3%	22,5%	10,2%
% RT	19,2%	28,0%	21,8%	14,9%
% Prostate Surgery	16,5%	17,8%	24,4%	14,7%
% Cintigraphy	33,8%	49,2%	53,8%	23,8%
% CT Pelvis	36,7%	44,2%	46,5%	31,9%
Testosterone/patient	2,1	3,1	3,8	1,4
PSA/patient	6,7	8,7	9,3	5,4
PMPP (R\$)	R\$ 42,952	R\$ 63,876	R\$ 55,191	R\$ 31,952

ADT = Adnrogen Deprivation Therapy

PMPP = Per Member Per Period of monitoring

RT = Radiotherapy

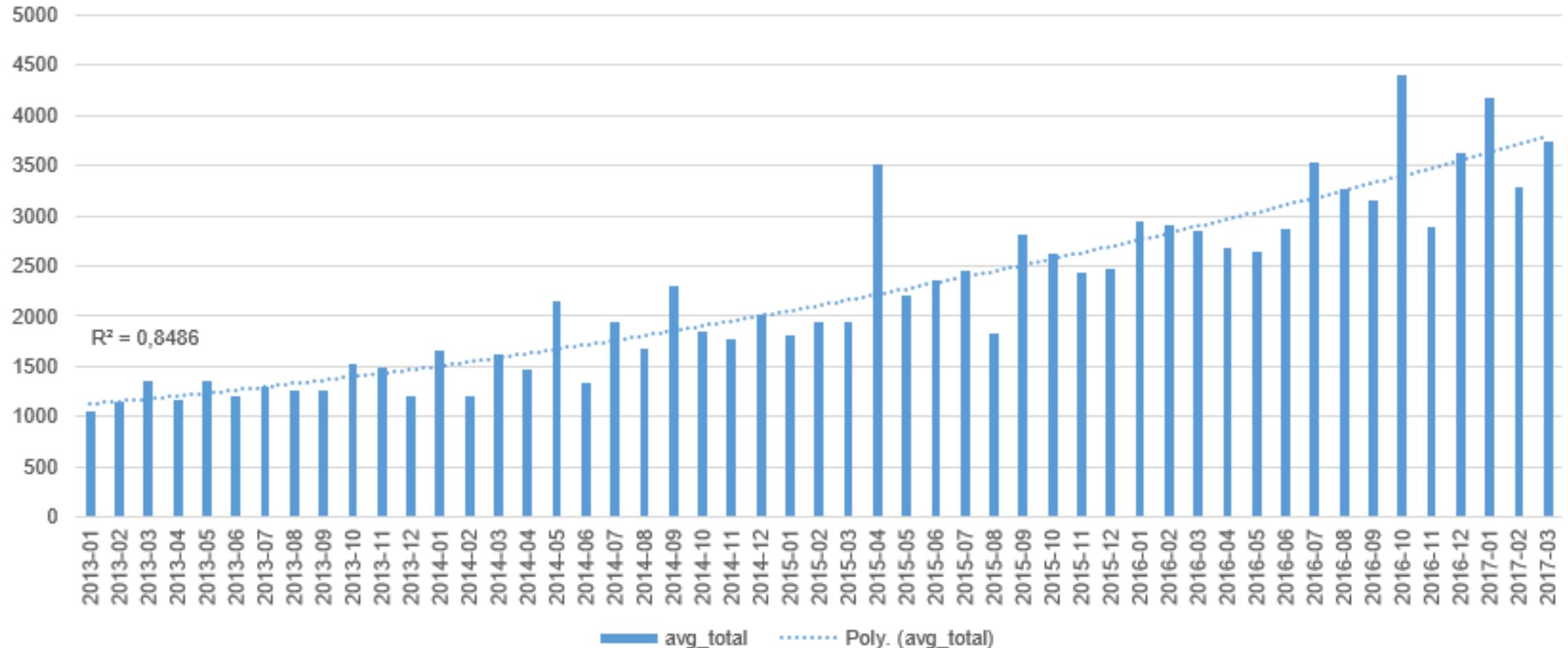
Testosterone and PSA per patient refer to the lab test, not to the result

*V1 = initial PSA result

Núcleo de Auto-Imunidade :: NAI

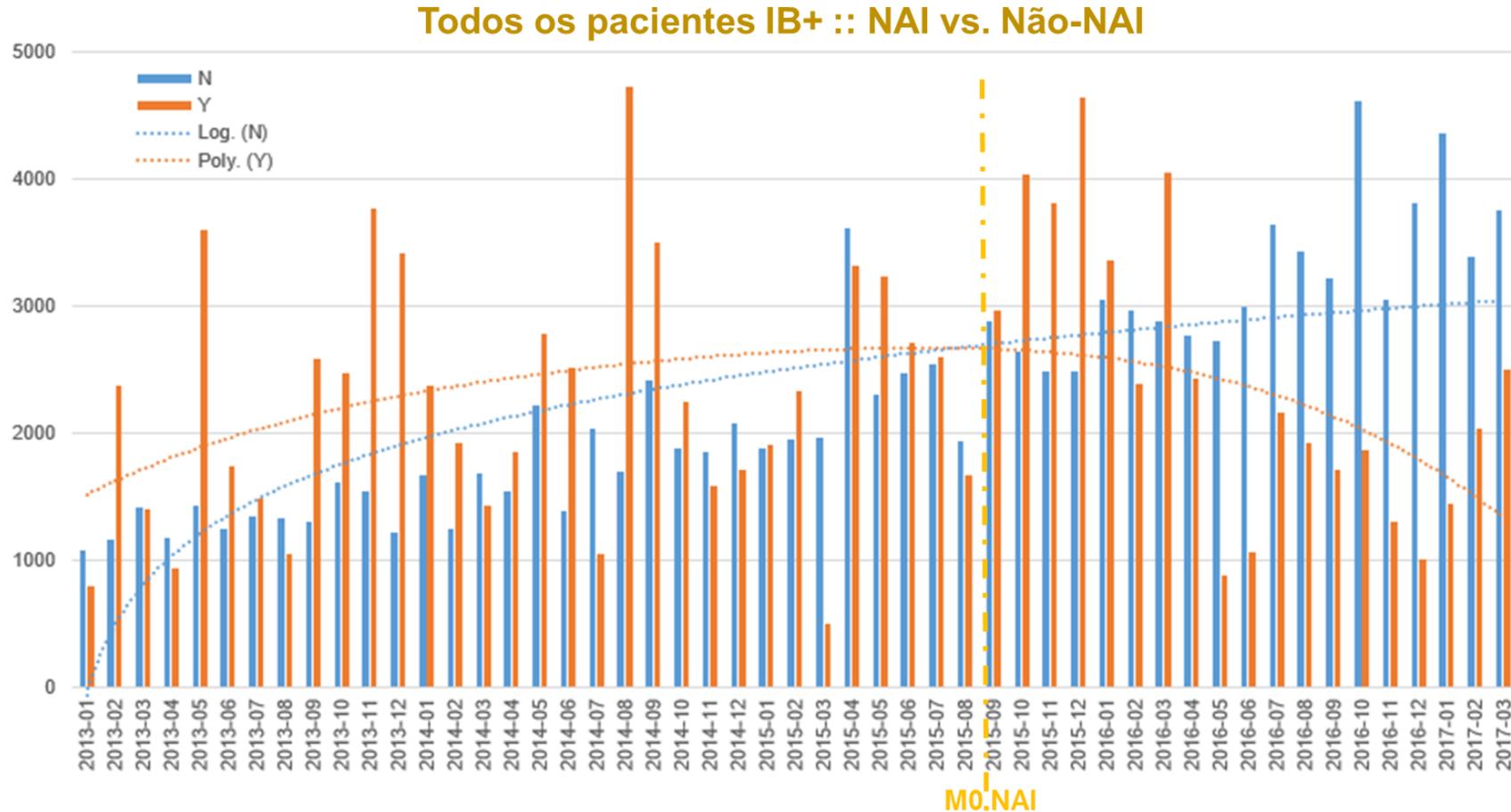
Avaliação preliminar de custo-efetividade por diagnóstico

Todos os pacientes IB+



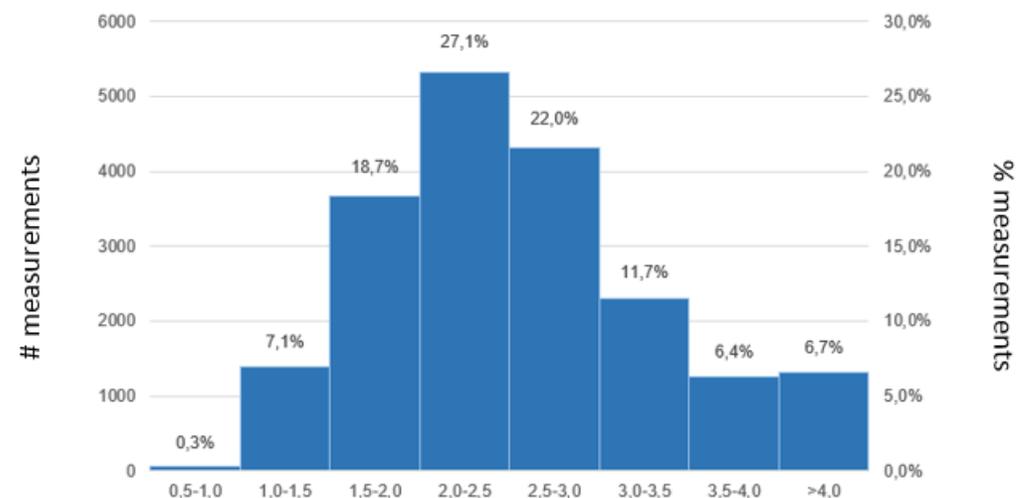
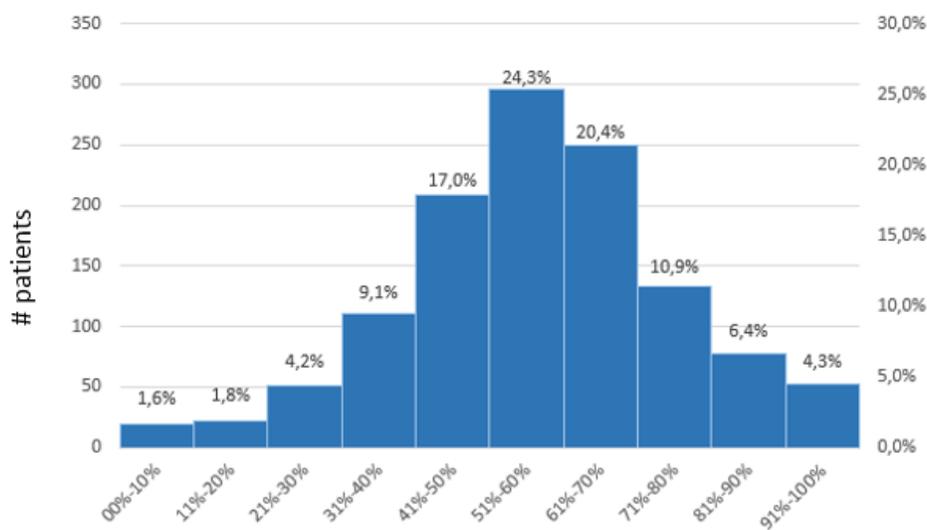
Núcleo de Auto-Imunidade :: NAI

Avaliação preliminar de custo-efetividade por diagnóstico



Anticoagulation Program Evaluation

Age groups	# Patients	Age (mean)	Under program		Stroke		AMI		Baseline				
			Bleed Minor	Bleed Major	Baseline	Follow up	Baseline	Follow up	TIA	CHF	DM	HBP	CRF
< 30 yo	20	25	1	1	6	1	0	2	0	1	0	3	0
30 to 39 yo	65	35	10	2	1	1	1	1	0	4	0	12	0
40 to 49 yo	122	45	18	5	7	9	12	0	3	19	9	37	3
50 to 59 yo	239	55	30	6	18	13	6	13	4	43	29	82	4
60 to 69 yo	290	65	25	12	18	10	23	14	6	57	52	129	10
70 to 79 yo	311	74	24	15	12	19	23	8	7	72	61	134	15
80+ yo	173	84	18	10	16	8	13	3	8	45	15	73	9
Total	1.220	64	126	51	78	61	78	41	28	241	166	470	41
		5,2%	10,3%	4,2%	6,4%	5,0%	6,4%	3,4%	2,3%	19,8%	13,6%	38,5%	3,4%



Anticoagulation Program Evaluation

Values	All patients				
	Q1	Q2	Q3	Q4	Total
Demographics					
# Patients	303	306	305	306	1.220
Age (average)	62,02	64,58	64,49	64,30	63,85
% Female	50,8%	55,2%	52,5%	44,1%	50,7%
Anticoagulation					
Period of monitoring (months, average)	13,87	16,04	18,02	17,24	16,30
TTR (average)	32,6%	51,2%	62,0%	80,2%	56,6%
INR tests per patient (average)	12,79	17,49	18,00	14,20	15,63
Risk Factors and Baseline Conditions					
CHA ₂ DS ₂ -VASc Average	2,38	2,46	2,55	2,44	2,45
Stroke	13,9%	12,1%	11,5%	17,3%	13,7%
Hypertension	33,3%	39,2%	43,6%	37,9%	38,5%
Diabetes	13,2%	14,4%	15,4%	11,4%	13,6%
Chronic Kidney Failure	4,6%	2,0%	4,3%	2,6%	3,4%
CHF	20,5%	18,3%	21,3%	19,0%	19,8%
Utilization Cost					
Cost per patient (BRL, total)	R\$ 39.171	R\$ 33.996	R\$ 31.797	R\$ 24.236	R\$ 32.284
Cost per patient (BRL, Outpatient)	R\$ 14.417	R\$ 11.425	R\$ 11.760	R\$ 8.719	R\$ 11.573
Cost per patient (BRL, Inpatient)	R\$ 24.754	R\$ 22.570	R\$ 20.037	R\$ 15.517	R\$ 20.710
INR cost per patient (BRL)	R\$ 296	R\$ 405	R\$ 417	R\$ 329	R\$ 362

CHF :: 12 months review

Indicadores 12M	População com ICC	População total*	Diferença %
Total	11.799	3.87M	
%	100,0%		
Cons Urg/Mbr	2,80	1,77	58%
Cons Elet /Mbr	9,60	4,23	127%
Alta Compl/Mbr	13,00	4,01	224%
Baixa Compl/Mbr	44,36	16,50	169%
IP Total/Mbr	0,80	0,13	518%
IP Clin/MBR	0,62	0,08	671%
IP Cir/MBR	0,19	0,05	273%
TMPH Médio	7,28	3,60	102%
Custo ano/Mbr	R\$ 23.198	R\$ 3.564	551%

FE% Range	IP / MBR	ER / MBR	Cost / MBR	MBR	MBR%
<30%	1,427	4,38	R\$ 32.192	178	16,3%
31-40%	1,345	4,13	R\$ 30.596	287	26,2%
41-50%	1,093	3,78	R\$ 27.263	313	28,6%
>51%	0,962	3,73	R\$ 23.991	316	28,9%
Total	1,176	3,98	R\$ 28.153	1094	100,0%

