



Universidade do Estado do Rio de Janeiro

Faculdade de Ciências Médicas



Integração de dados na saúde

Denizar Vianna



A iniciativa da Rede Nacional de Dados em Saúde (RNDS), parte do Programa Conecte SUS, ambos institucionalizados pela portaria GM/MS n. 1.434, de 28 de maio de 2020, estabelece o conceito de uma plataforma padronizada, moderna e interoperável de serviços, informações e conectividade que é, em si, transformadora para a Saúde.

A RNDS estabelece como objetivo:

“promover a troca de informações entre os pontos da Rede de Atenção à Saúde (RAS), permitindo a transição e continuidade do cuidado nos setores público e privado” (BRASIL, [2020]).



Fonte: Brasil. Ministério da Saúde. Secretaria-Executiva. Departamento de Informática do SUS. Estratégia de Saúde Digital para o Brasil 2020-2028 [recurso eletrônico] / Ministério da Saúde, Secretaria-Executiva, Departamento de Informática do SUS. – Brasília : Ministério da Saúde, 2020.

128 p. : il.

624.369

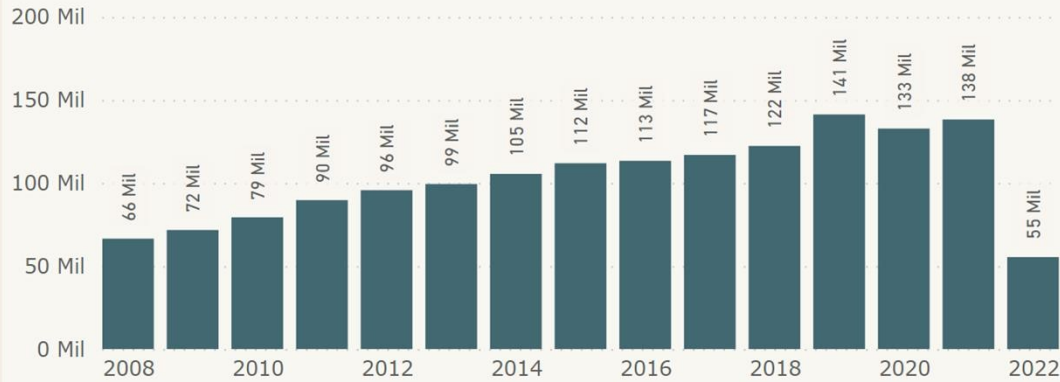
Unique Patients

Prostate Cancer

Source: Todos | ICD Group, ICD Description: Todos | Age Range: Todos | Region, State, City: Todos | Gender: Male

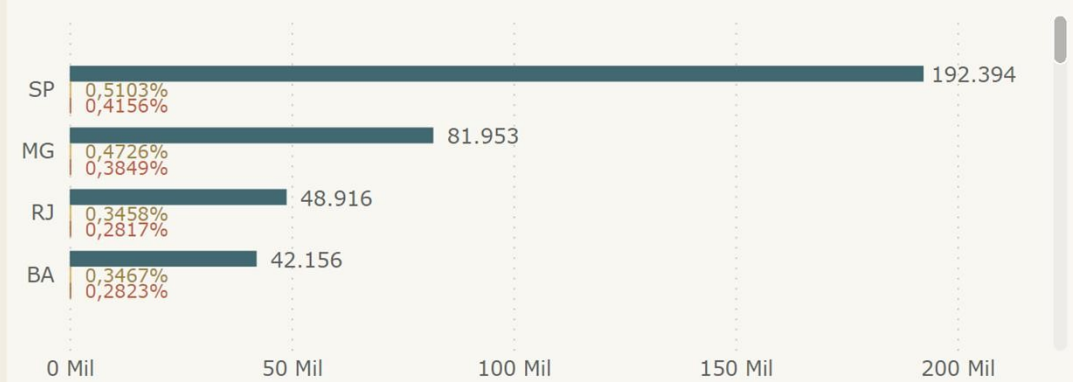
Unique Patient por Year e Gender

Gender ● Male



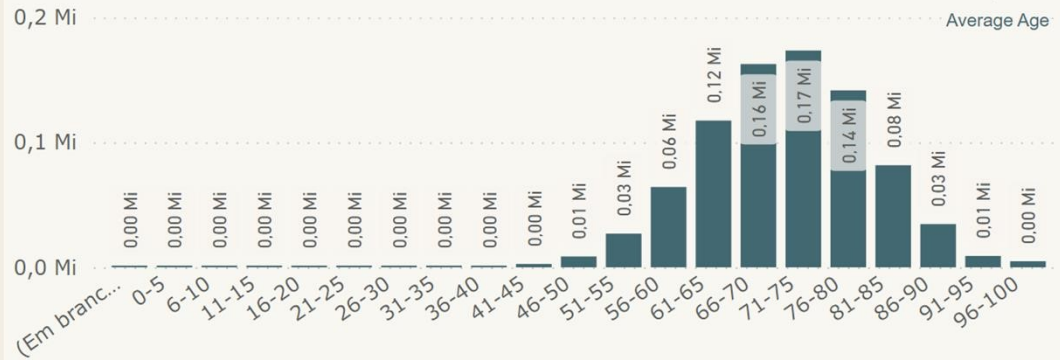
Unique Patients, Prevalence SUS e Prevalence IBGE por State

● Unique Patients ● Prevalence SUS ● Prevalence IBGE

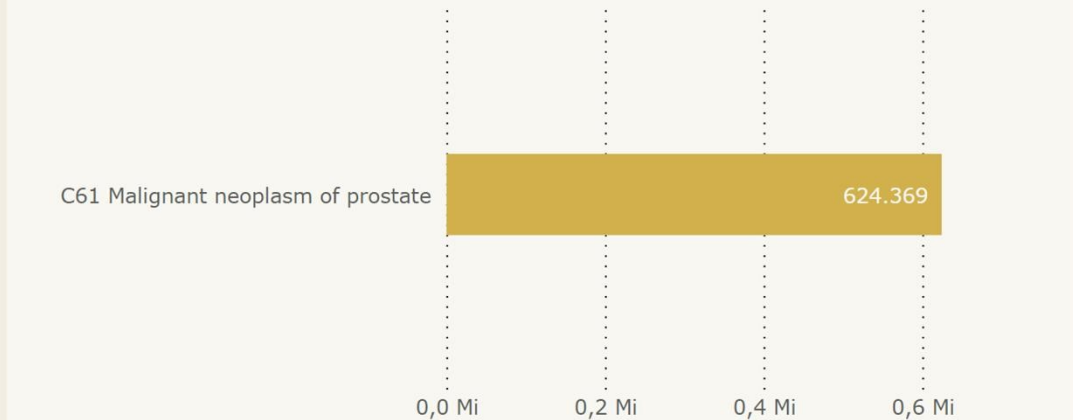


Unique Patient por Age Range e Gender

Gender ● Male



Unique Patients por ICD Description



624.176

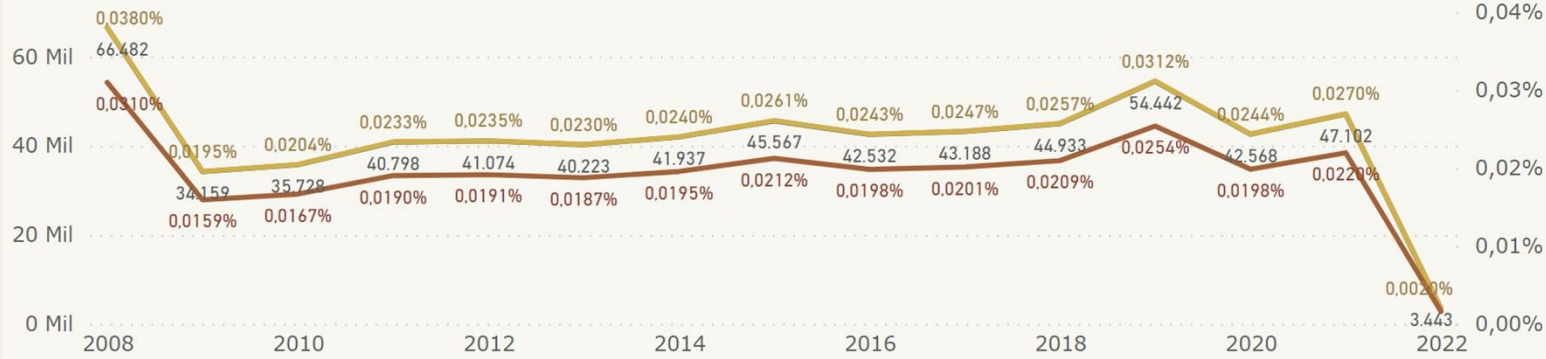
Unique Patients

Prostate Cancer

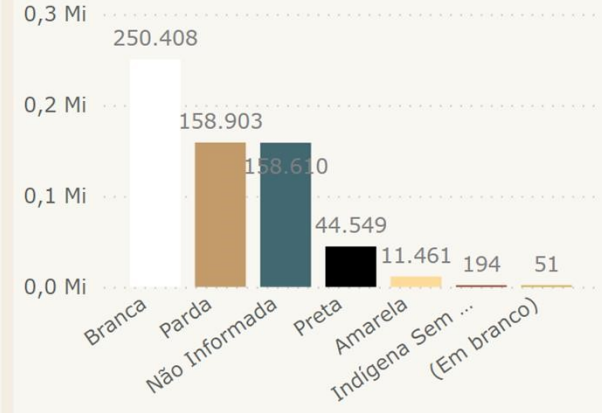
Source: Todos | ICD Group, ICD Description: Todos | Age Range: Todos | Region, State: Todos | Gender: Male

Unique Patients, Incidence Rate SUS e Incidence Rate IBGE por Year

— Unique Patients — Incidence Rate SUS — Incidence Rate IBGE



Unique Patients por Race

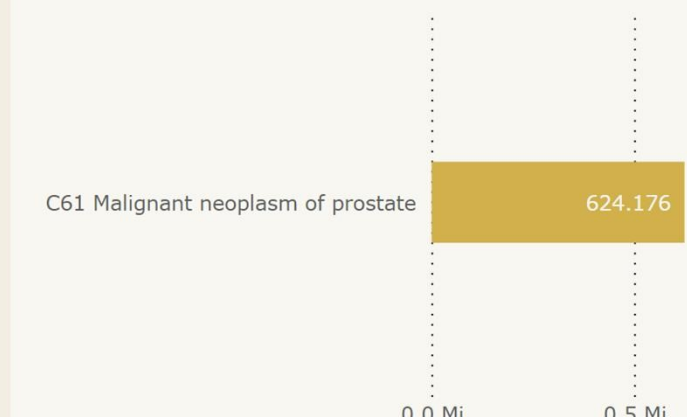


Unique Patients e %GT Unique Patients por Year

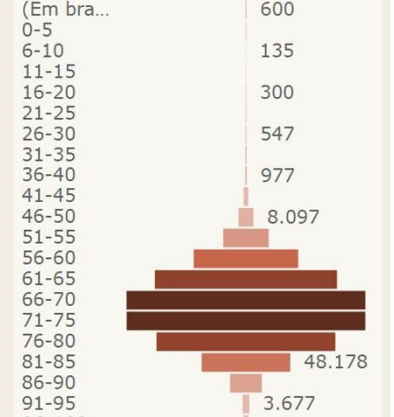
● Aumentar ● Diminuir ● Total



Unique Patients por ICD Description



Unique Patients por Age Range



Prostate Cancer

335.632 Hospitalizations	0,92 Avg. Hospitalizations	R\$1.708,89 Avg. Hospitalization Amount
244,61 Avg. TtT	1.150 Avg. Survival DEAD	2.339 Avg. Survival ALL

Age Range: Todos

Region, State, City: Todos

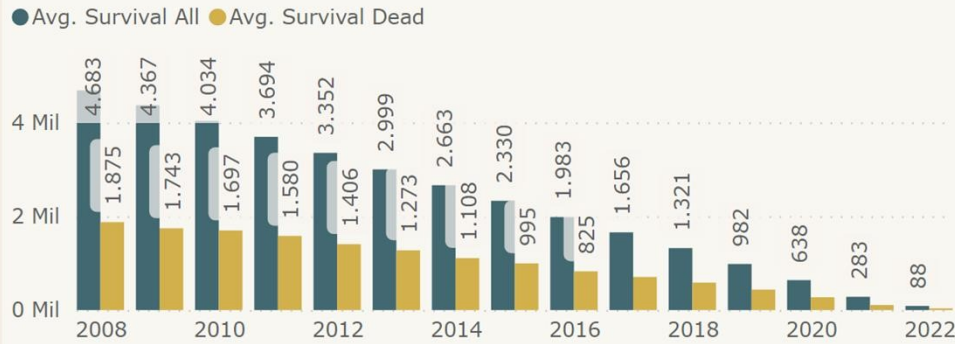
Gender: Male

ICD Group, ICD Description: Todos

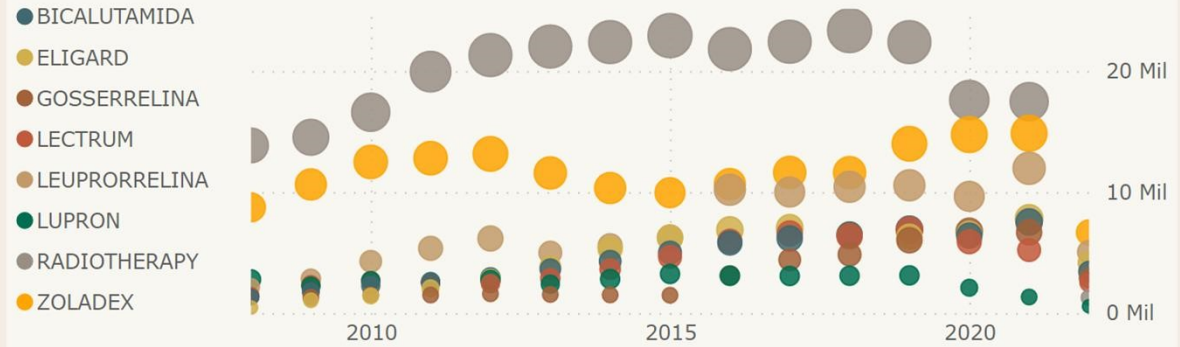
Histology Behavior: Todos

Initial Staging: Todos

Overall Survival by Year



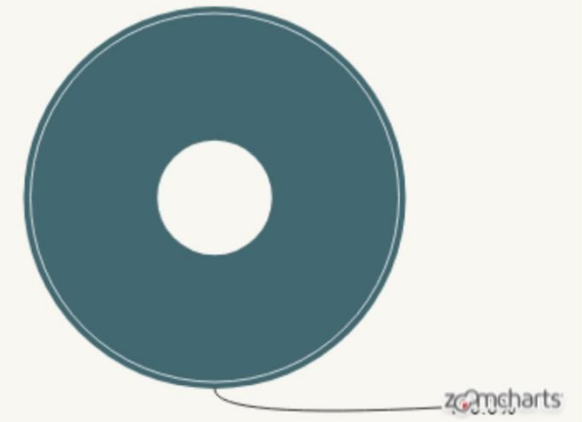
Unique Patients by Treatment and Year



Treatment Entity	Unique Patients	Avg. TtT	Avg. Survival Dead	Avg. Survival All
FUNDACAO PIO XII BARRETOS	11.359	255,79	1.393	2.565
INST DO CANCER ARNALDO VIEIRA DE CARVALHO	10.724	302,48	1.177	2.272
HOSPITAL ARISTIDES MALTEZ	8.096	312,45	1.231	2.195
HOSPITAL DE CANCER	7.786	230,85	1.180	2.445
HOSPITAL HAROLDO JUACABA	7.058	247,44	1.025	2.189
HOSPITAL SANTA RITA DE CASSIA	6.893	215,86	1.059	2.464
HOSPITAL DR LUIZ ANTONIO	6.514	208,53	794	2.671
ASSOCIACAO MARIO PENNA	6.439	174,95	1.375	2.586
HOSPITAL MARIO KROEFF	5.808	245,45	1.274	2.575
ASSOCIACAO PIAUIENSE DE COMBATE AO CANCER AL CENOR AL MEIDA	5.658	-26,70	1.008	2.587
Total	439.832	244,61	1.150	2.339

Treatment	Unique Patients
RADIOTHERAPY	247.000
ZOLADEX	69.000
LEUPRORRELINA	44.000
BICALUTAMIDA	31.000
ELIGARD	29.000
LECTRUM	23.000
GOSSERRELINA	20.000
LUPRON	16.000
CIPROTERONA	14.000
CASODEX	14.000
TXT	13.000
Total	439.832

Most Important Basis





Prostate Cancer

Procedure

Todos

01/01/2010 31/12/2019



624.369

Unique Patients

R\$4,07 Bi

Approved Value

Source

Todos

ICD Group, ICD Description

Todos

Age Range

Todos

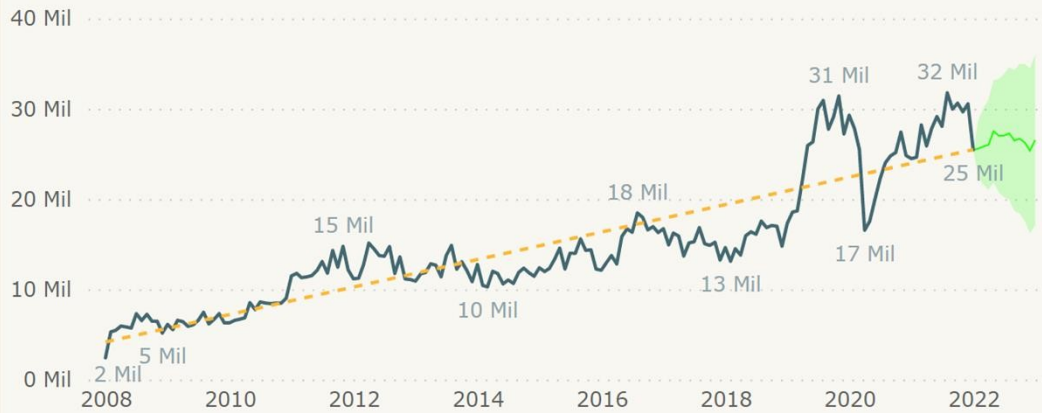
Region, State, City

Todos

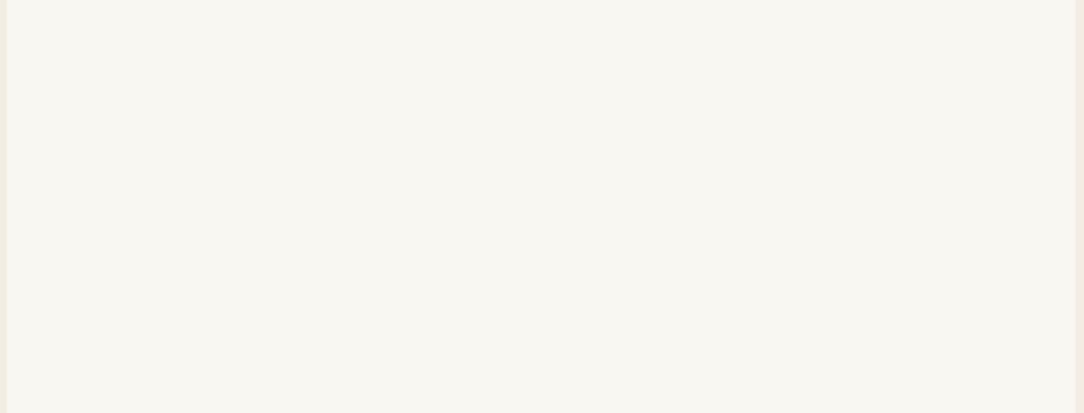
Gender

Male

of Procedures in Male Patients por Date



of Procedures in Female Patients por Date



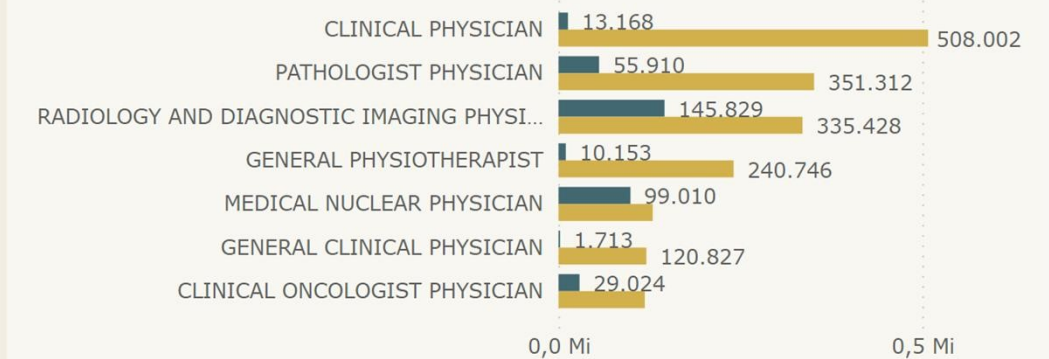
Procedure

of Procedures

UNIT OF COMPENSATION FOR GROUND TRANSPORT OF PATIENT (EVERY 50 KM)	538.549
PATHOLOGIC EXAMINATION FOR FREEZING - WAX BY SURGICAL SAMPLE OR BIOPSY (EXCEPT CERVICAL AND BREAST)	376.228
MEDICAL CONSULTATION ON SPECIALIZED ATTENTION	233.106
SCINTIGRAPHY OF BONES WITH OR WITHOUT BLOOD FLOW (WHOLE BODY)	163.210
COMPUTED TOMOGRAPHY OF PELVIS - BASIN - LOWER ABDOMEN	117.411
PHYSICAL THERAPY IN ONCOLOGIC PATIENT	110.283
PHYSICAL THERAPY IN PATIENT PRE - POST UROGYNECOLOGICAL SURGERY	92.126
FINANCIAL AID FOR PATIENT FOOD - OVERNIGHT STAY	65.498
PERCUTANEOUS BIOPSY GUIDED BY COMPUTED TOMOGRAPHY - ULTRASONOGRAPHY - MRI - X-RAY	64.565
FINANCIAL AID FOR PATIENT FOOD WITHOUT OVERNIGHT STAY	61.978
UNIT OF COMPENSATION FOR GROUND TRANSPORT OF COMPANION (EVERY 50 KM)	52.951
COMPUTED TOMOGRAPHY OF UPPER ABDOMEN	47.735
MAGNETIC RESONANCE OF PELVIS - LOWER ABDOMEN	36.050
Total	2.504.730

Unique Patients e Procedures por Profession

● Unique Patients ● Procedures





01/01/2010 31/12/2019

439.832

Unique Patients

R\$3,96 Bi

Approved Value

Prostate Cancer

Source

Todos

ICD Group, ICD Description

Todos

Age Range

Todos

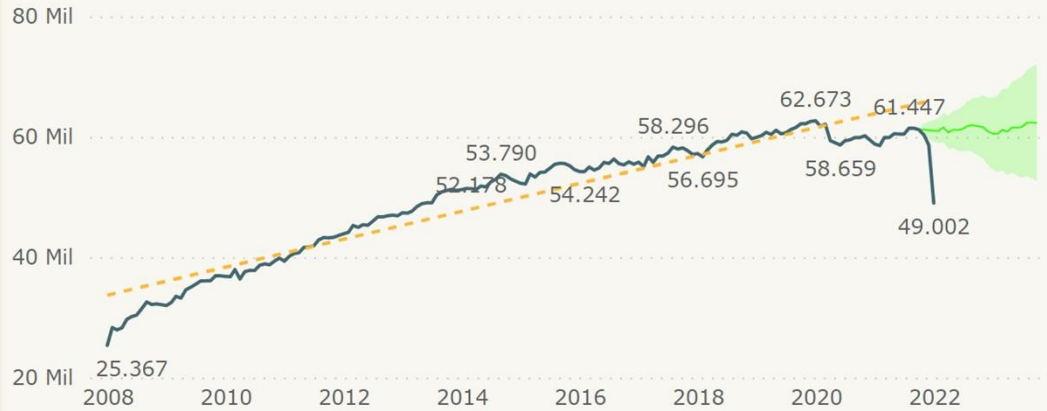
Region, State, City

Todos

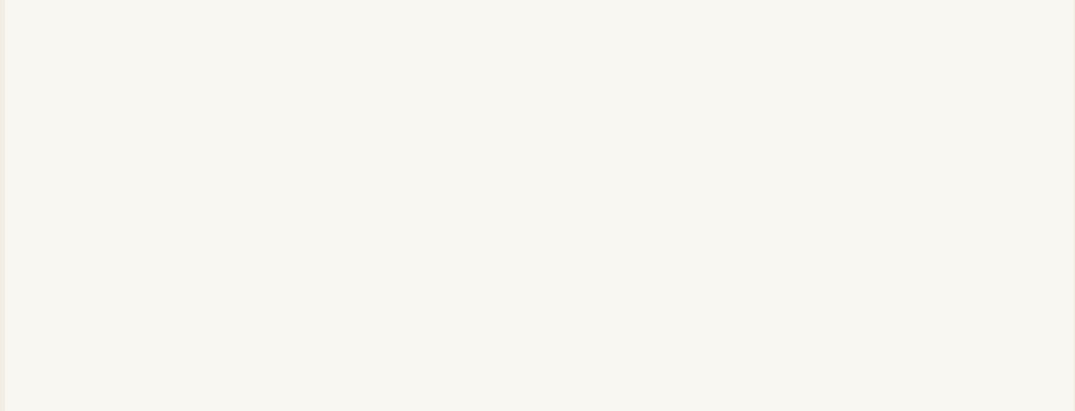
Gender

Male

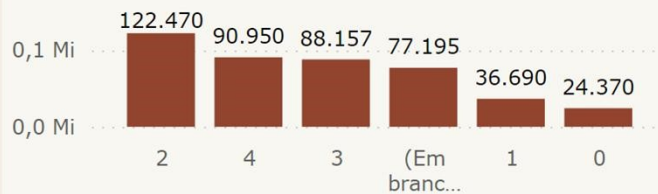
Male Unique Patients por Date



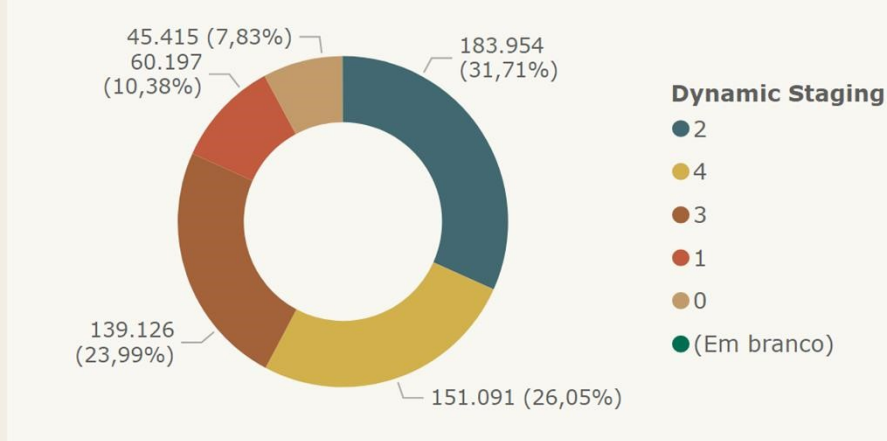
Female Unique Patients por Date



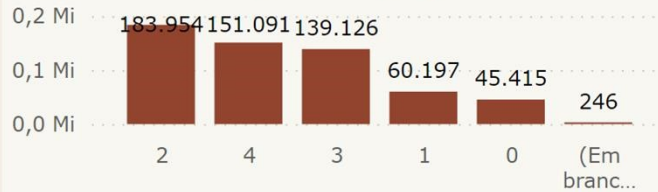
Unique Patients por Initial Staging



Unique Patients por Dynamic Staging



Unique Patients por Dynamic Staging



Unique Patients por Lymph Nodes





247.476
Unique Patients

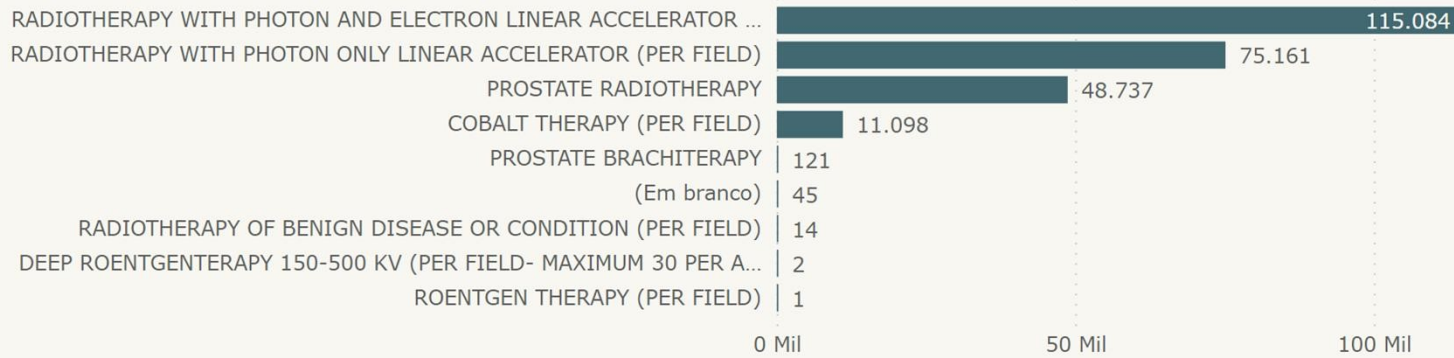
Prostate Cancer



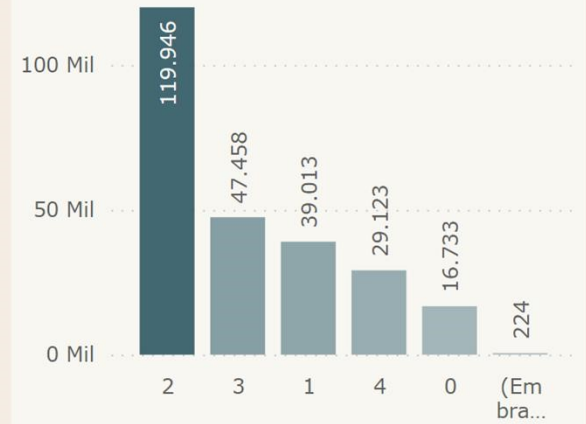
Histology Behavior: Todos
 Dynamic Staging: Todos
 ICD Group, ICD Description: Todos
 Age Range: Todos
 Region, State, City: Todos
 Gender: Male

Unique Patients por Procedure e Gender

Gender Male



Unique Patients por Dynamic Staging



HCP CNES	HCP Name	Especialty	Unique Patients
980016003592589	JEFFERSON MAZZEI	RADIOLOGY AND DIAGNOSTIC IMAGING PHYSICIAN	5.157
980016003556744	MARILIA MARTINS SILVEIRA MARONE	MEDICAL NUCLEAR PHYSICIAN	4.070
124346923720002	FRANCISCO HOMERO COELHO	RADIOLOGY AND DIAGNOSTIC IMAGING PHYSICIAN	3.392
190084569420003	DANIEL NAVA	RADIOLOGY AND DIAGNOSTIC IMAGING PHYSICIAN	2.486
		RADIOLOGY AND IMAGING DIAGNOSIS PHYSICIAN	2.309
203833977950002	DANIEL JOSE MARTINS BARBOSA	RADIOLOGY AND DIAGNOSTIC IMAGING PHYSICIAN	2.126
		MEDICAL NUCLEAR PHYSICIAN	2.014
		RADIOLOGY AND DIAGNOSTIC IMAGING PHYSICIAN	1.811
		NUCLEAR MEDICINE PHYSICIAN	1.371
170455373420003	BENEDITA ANDRADE LEAL DE ABREU	MEDICAL NUCLEAR PHYSICIAN	1.290
130218949320009	CARLA RACHEL ONO	MEDICAL NUCLEAR PHYSICIAN	1.248
170646610880001	RICARDO AUGUSTO MACHADO E SILVA	MEDICAL NUCLEAR PHYSICIAN	1.206
Total			111.479

Unique Patients por Lymph Nodes





Prostate Cancer



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244,61 Avg. TtT	1.150 Avg. Survival DEAD	2.339 Avg. Survival ALL

Age Range: Todos

Region, State, City: Todos

Gender: Male

ICD Group, ICD Description: Todos

Histology Behavior: Todos

Initial Staging: Todos

Treatment Entity: Todos

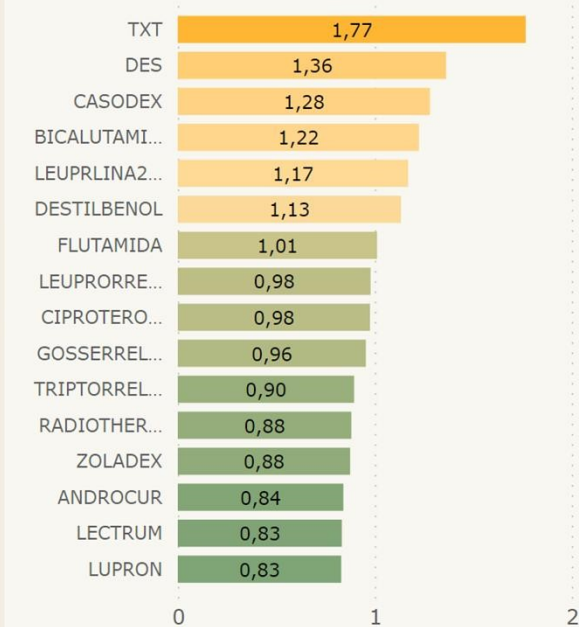
Treatment: Todos

Type of Chemotherapy: Todos

Treatment	Unique Patients	Avg. Hosp. per Patient	Avg. Hosp. Amount	Avg. TtT	Avg. Survival DEAD
RADIOTHERAPY	247.476	0,88	R\$1.786,17	221,24	1.36
ZOLADEX	69.946	0,88	R\$1.624,23	226,39	1.32
LEUPRORRELINA	44.429	0,98	R\$1.858,06	216,92	1.34
BICALUTAMIDA	31.930	1,22	R\$1.745,24	276,68	1.30
ELIGARD	29.749	0,71	R\$1.305,61	242,44	1.34
LECTRUM	23.491	0,83	R\$1.421,34	226,83	1.38
GOSSERRELINA	20.533	0,96	R\$2.131,61	256,12	1.27
Total	439.832	0,92	R\$1.708,89	244,61	1.15

Treatment Search:

Average Hospitalizations per Treatment



Average Survival DEAD per Treatment



Region	Unique Patients	Avg. Hosp. per Patient	Avg. Hosp. Amount	Avg. TtT	Avg. Survival DEAD
☑ Southeast	221.945	0,92	R\$1.708,89	243,39	1.222
☑ Northeast	101.717	0,92	R\$1.708,89	218,70	994
☑ South	77.564	0,92	R\$1.708,89	266,22	1.138
☑ Midwest	25.161	0,92	R\$1.708,89	267,60	986
☑ North	15.130	0,92	R\$1.708,89	288,48	903
Total	439.832	0,92	R\$1.708,89	244,61	1.150



01/01/2010 31/12/2019

Prostate Cancer



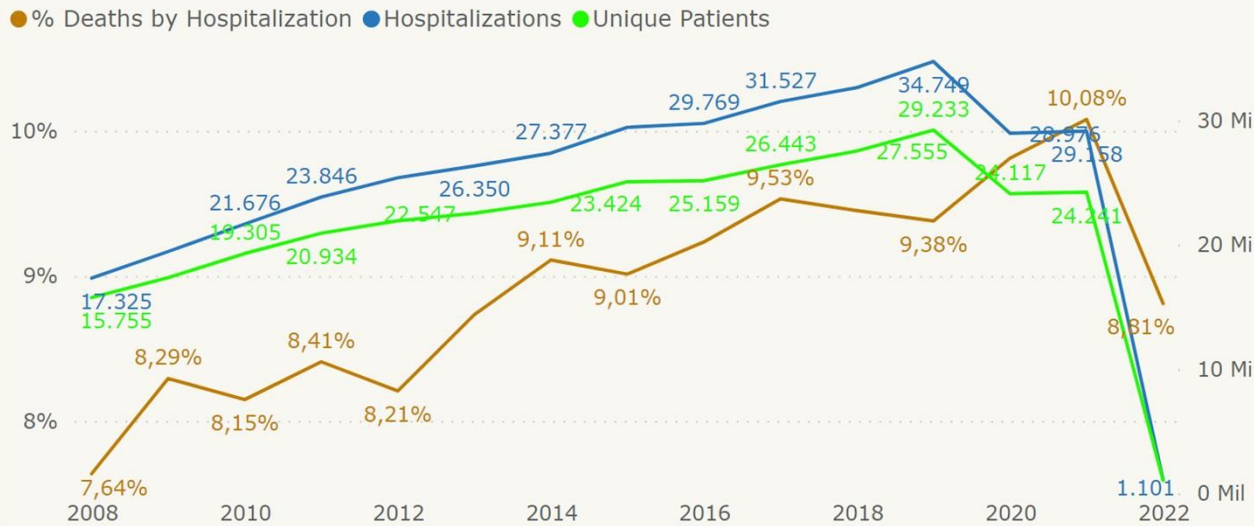
378.824 Hospitalizations
 293.464 Unique Patients
 12 Mi Professional Acts
 988,93 Mi Hospitalizations Amount

ICD Group, ICD Description
 Todos

Region, State, City
 Todos

Gender
 Male

% Deaths by Hospitalization, Hospitalizations e Unique Patients por Year



Procedure

Todos

Average Age e Unique Patients por Entity

Entity	Average Age
HOSPITAL REGIONAL DE GRAJAU	80,71
HOSPITAL REGIONAL IMACULADA CONCEI...	79,92
HOSPITAL E MATERNIDADE MUNICIPAL AN...	79,53
UPA BANGU	79,00
HOSPITAL REGIONAL INACIO DE SA	78,71
HOSPITAL E MATERNIDADE SOTERO DE S...	78,35
HOSPITAL REGIONAL DE TEFE	78,11
SANTA CASA MISER STACRUZ RIO PARDO	77,97
HOSPITAL REGIONAL DO GUARA I	77,97
HOSPITAL REGIONAL DE RUY BARBOSA	77,89
HOSPITAL MUNICIPAL JOSE GONCALVES R...	77,89
SANTA CASA DE ATIBAIA	77,86
COMPLEXO HOSPITALAR IRMA DULCE O S S	77,86
HOSPITAL MUNICIPAL PROF MAGALHAES N...	77,80
HOSPITAL MUNICIPAL DE JANUARIA	77,48
SANTA CASA DE DRACENA	77,46
HOSPITAL MUNICIPAL DE JAGUAQUARA	77,42
HOSPITAL REGIONAL DR PONTES NETO	77,42

Region	Unique Patients	Hospitalizations	Hospitalizations by 100k inhabitants	Avg Stay	Avg Hospitalization Amount	Deaths	Deaths per 100k
Southeast	151.577	198.483	222,98	5,24	R\$2.467,43	17.471	17,471
Northeast	69.651	86.332	150,47	5,08	R\$3.486,52	6.939	6,939
South	45.624	60.791	201,33	5,16	R\$2.275,16	6.109	6,109
Midwest	18.186	22.772	117,91	5,27	R\$1.946,45	2.333	2,333
North	8.499	10.446	55,94	6,92	R\$1.488,90	1.368	1,368
Total	293.464	378.824	176,55	5,24	R\$2.610,52	34.220	34,220



01/01/2010 31/12/2019

Prostate Cancer



378.824	293.464	12 Mi	988,93 Mi
Hospitalizations	Unique Patients	Professional Acts	Hospitalizations Amount

ICD Group, ICD Description

Todos

Region, State, City

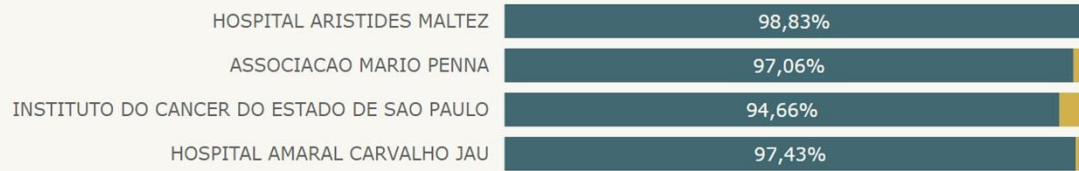
Todos

Gender

Male

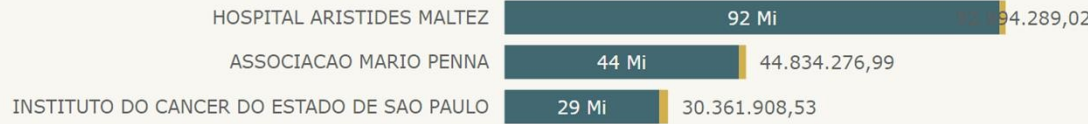
Hospitalization Amount e ICU Amount por Entity

● Hospitalization Amount ● ICU Amount



Hospitalization Amount e ICU Amount por Entity

● Hospitalization Amount ● ICU Amount



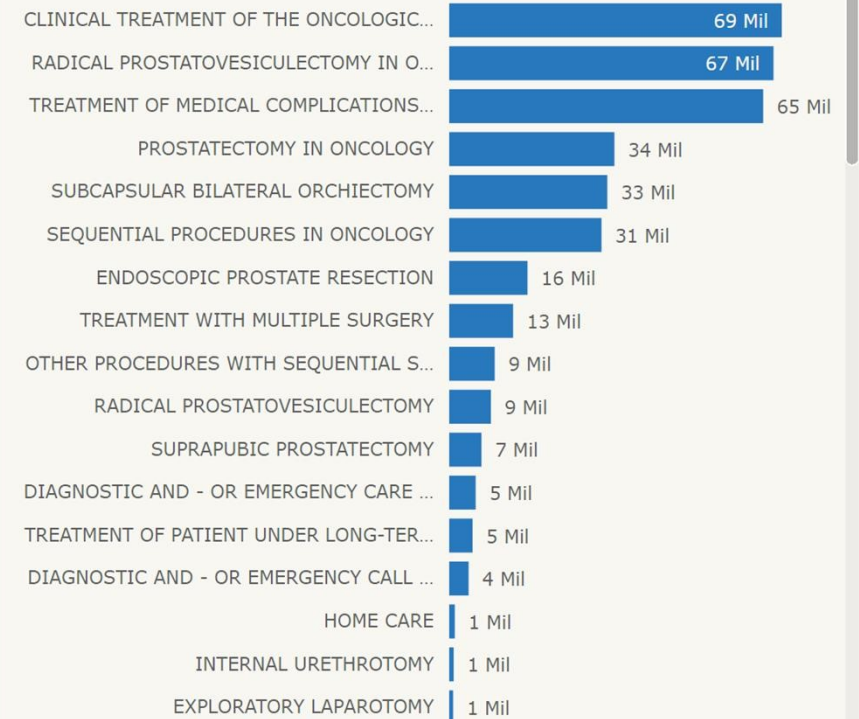
Region	Unique Patients	Hospitalizations	Hospitalizations by 100k inhabitants	Avg Stay	Avg Hospitalization Amount	Deaths	Deaths per 100k
⊕ Southeast	151.577	198.483	222,98	5,24	R\$2.467,43	17.471	
⊕ Northeast	69.651	86.332	150,47	5,08	R\$3.486,52	6.939	
⊕ South	45.624	60.791	201,33	5,16	R\$2.275,16	6.109	
⊕ Midwest	18.186	22.772	117,91	5,27	R\$1.946,45	2.333	
⊕ North	8.499	10.446	55,94	6,92	R\$1.488,90	1.368	
Total	293.464	378.824	176,55	5,24	R\$2.610,52	34.220	

Procedure

Todos

Qtd. Hospitalizações 6 por Procedure e Gender

Gender ● M



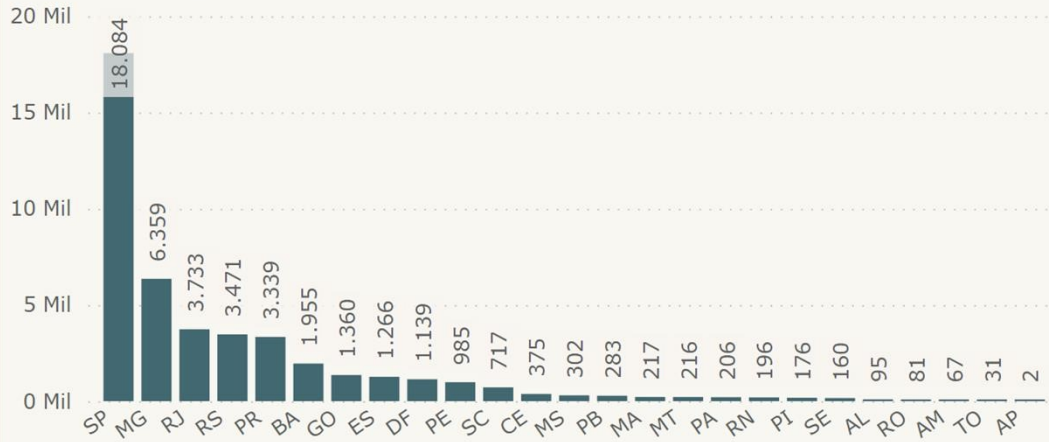
Region, State

Todos

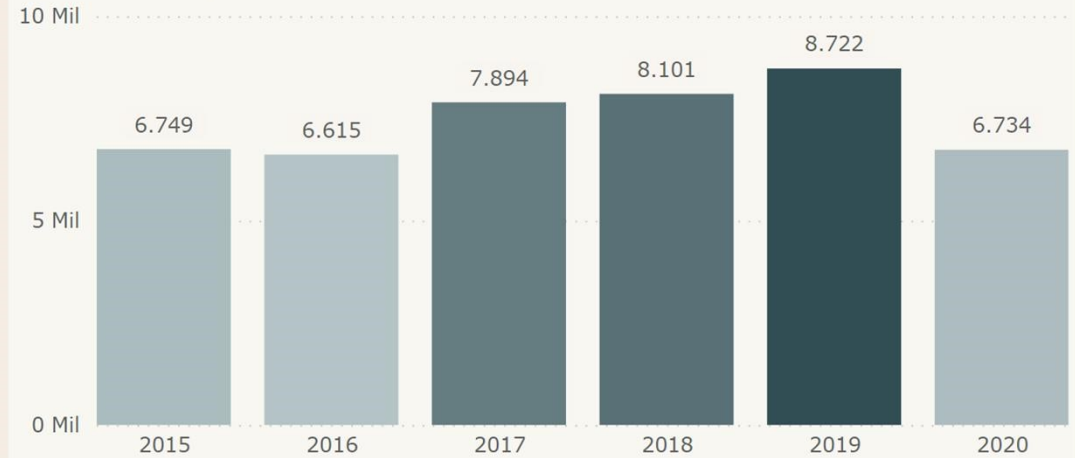
Prostate Cancer



Hospitalizations per State

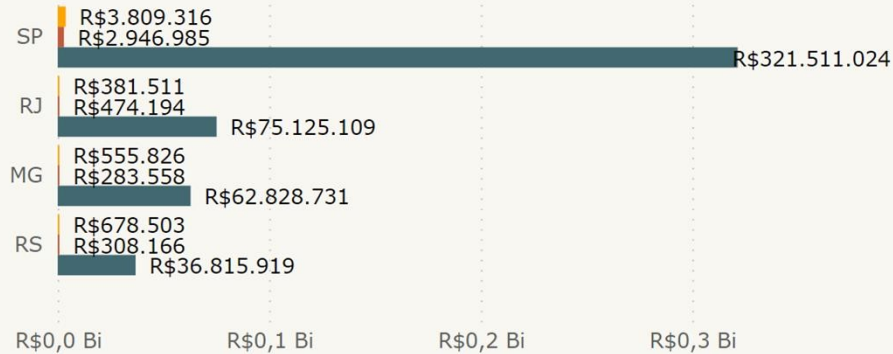


Hospitalizations per Year

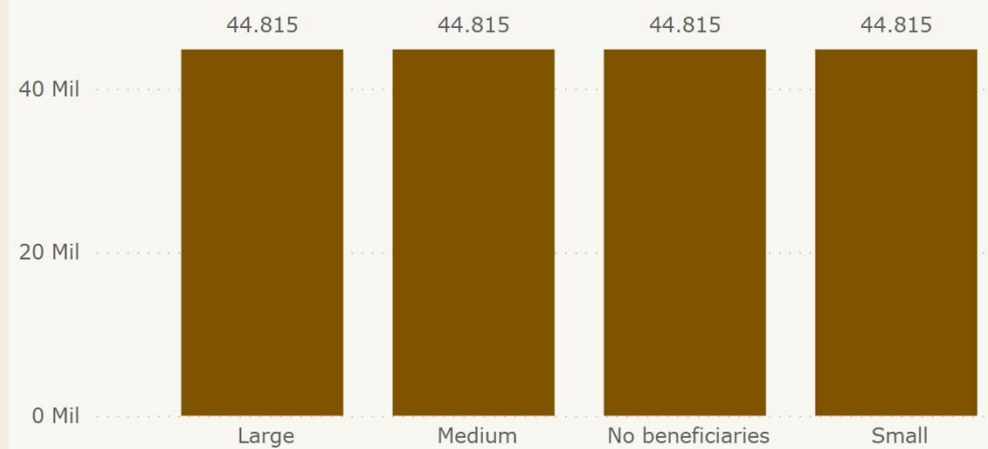


Hospitalization por State e Gender

Gender ● (Em branco) ● F ● M



Hospitalizations por Company Size



Region, State

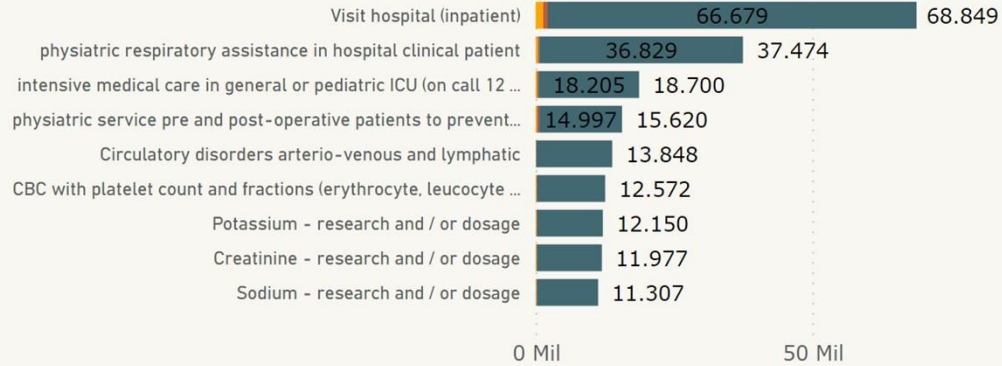
Todos

Prostate Cancer

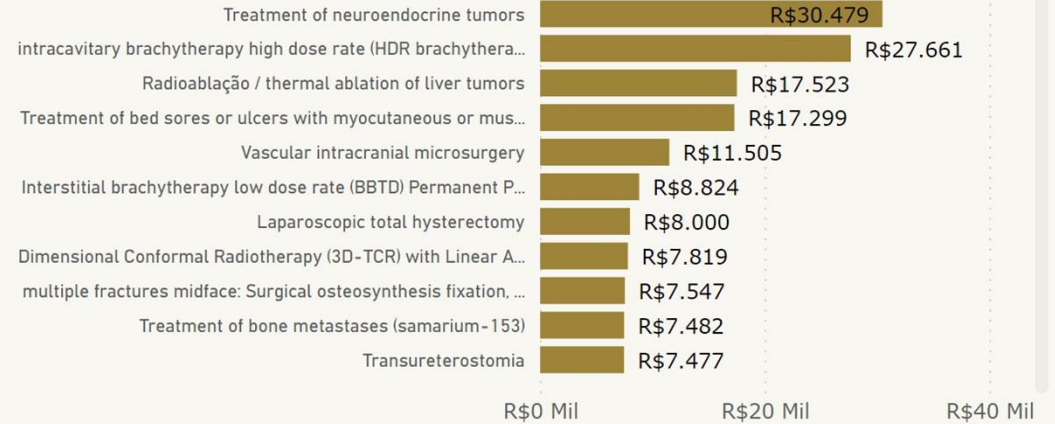


Procedure Qty. por Procedure e Gender

Gender ● (Em branco) ● F ● M



Avg. Procedure Amount por Procedure



Procedure Amount por Region e Gender

Gender ● (Em branco) ● F ● M



Procedure amount por ICD Description e Gender

Gender ● (Em branco) ● F ● M





Prostate Cancer



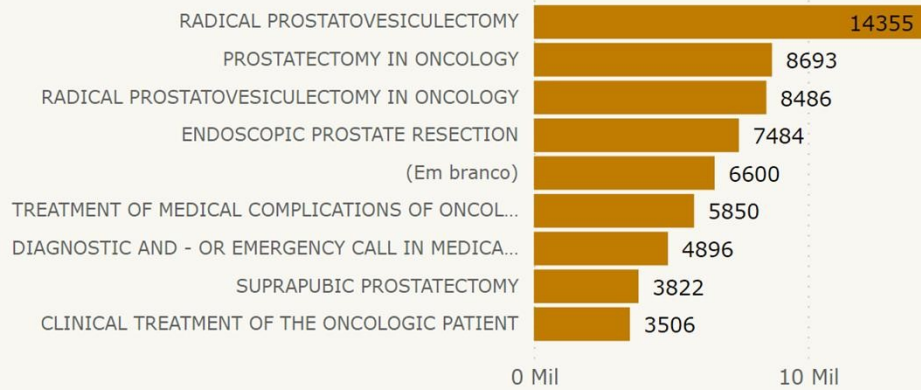
Region, State

Todos

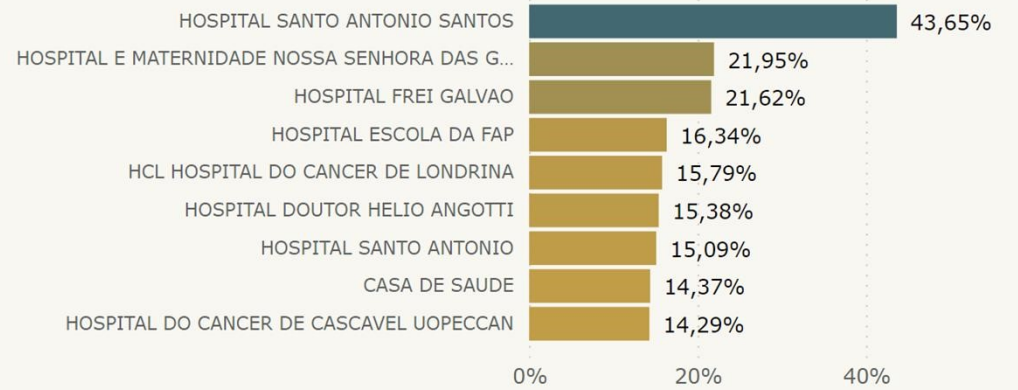
Paying Source

Todos

Procedure Qty. por Procedure

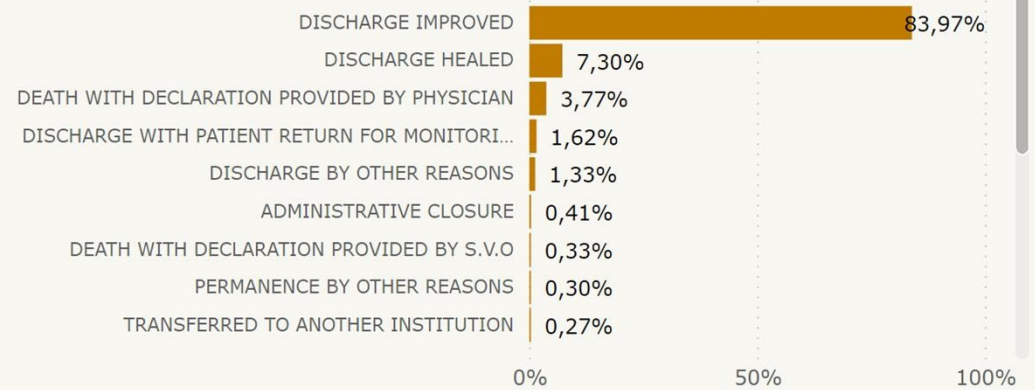


Deaths by Hospitalization por Entity



State	City	Entity	Hospitalizations	Avg. Stay	Deaths	Deaths by Hospitalization
SP	SÃO PAULO	HOSPITAL ISRAELITA ALBERT EINSTEIN	3.368	3	18	0,53%
SP	SÃO PAULO	HOSPITAL SIRIO LIBANES	2.758	5	76	2,76%
SP	SÃO PAULO	HOSP 9 DE JULHO	2.581	4	56	2,17%
SP	SÃO PAULO	A C CAMARGO CANCER CENTER	2.112	4	77	3,65%
MG	BELO HORIZONTE	HOSPITAL FELICIO ROCHO	2.025	3	52	2,57%
RS	PORTO ALEGRE	HOSPITAL MOINHOS DE VENTO	1.679	6	61	3,63%
RS	PORTO ALEGRE	IRMANDADE DA SANTA CASA DE MISERICORDIA DE PORTO ALEGRE	1.507	7	70	4,64%
SP	SÃO PAULO	HOSPITAL OSWALDO CRUZ	1.363	5	48	3,52%
RS	SANTA MARIA	HOSPITAL DE CARIDADE ASTROGILDO DE AZEVEDO	1.310	7	75	5,73%
SP	JAÚ	HOSPITAL AMARAL CARVALHO JAU	1.151	4	30	2,61%
Total			81.124	4	3.873	4,77%

Hospitalizations por Outcome



“É melhor estar aproximadamente certo do que precisamente errado”

Warren Buffet





Universidade do Estado do Rio de Janeiro
Faculdade de Ciências Médicas



OBRIGADO

denizar@uerj.br