



Clinical Perspective Operasi Bedah Jantung Katup, Bawaan, dan Aneurisma dalam Era JKN

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Hospitals with Dedicated Cardiac Surgery Unit: Special Capital Region of Jakarta



West Jakarta

	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
Harapan Kita (Pediatrics)	1200	19%	VSD/TOF/Complex Congenital Anomalies	95%
Harapan Kita (Adult)	1600	25.3%	CABG/Valvular/Aortic Diseases	95%
Siloam Kebun Jeruk	500	7.9%	CABG/Valvular	80%
RS Pelni	100	1.6%	CABG/MVR/AVR	95%

North Jakarta

	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RSUD Koja	5	0.1%	CABG	100%

Central Jakarta

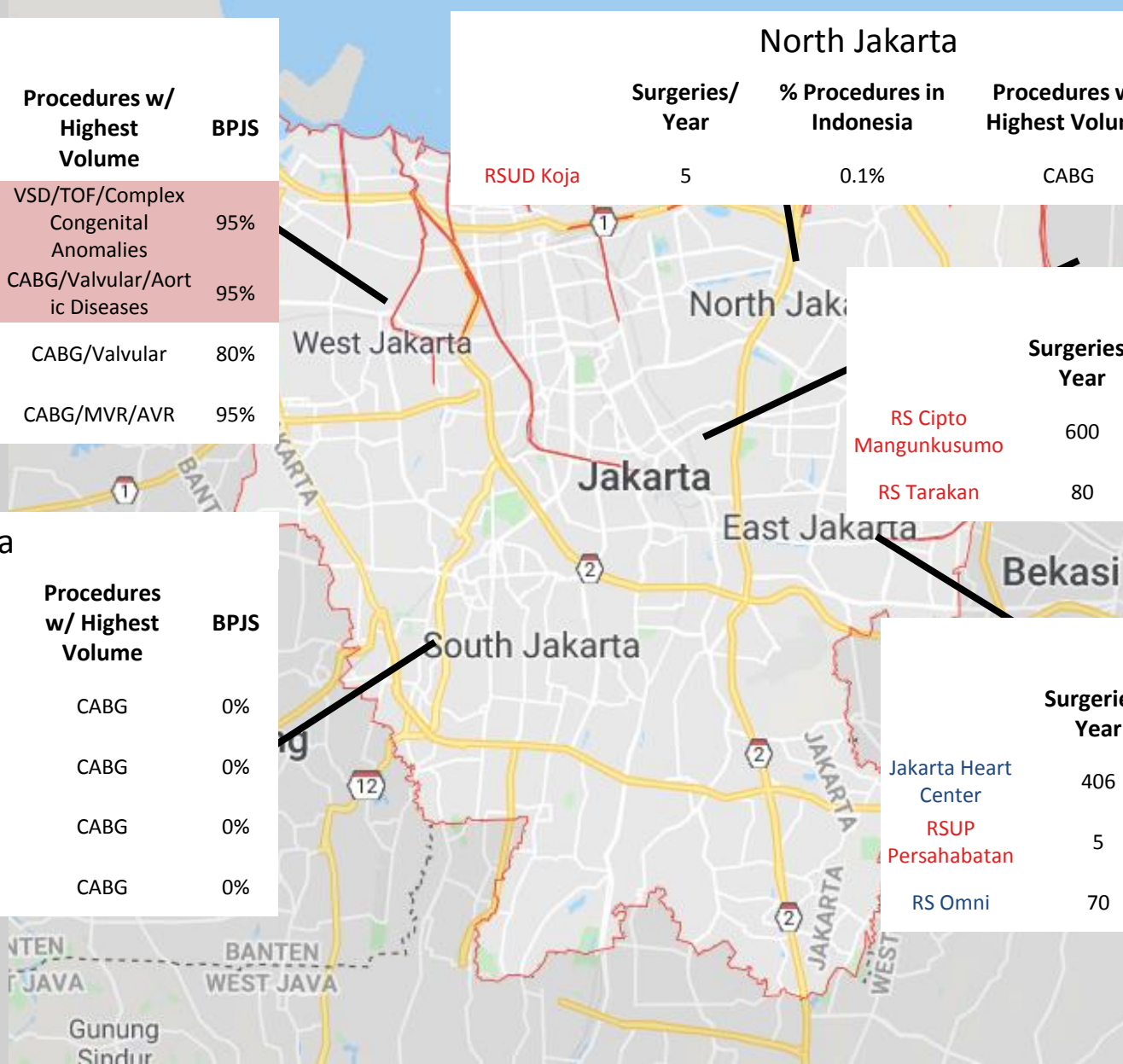
	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RS Cipto Mangunkusumo	600	9.5%	CABG/Congenital/Valvular	98%
RS Tarakan	80	1.3%	CABG/Valvular	99%

South Jakarta

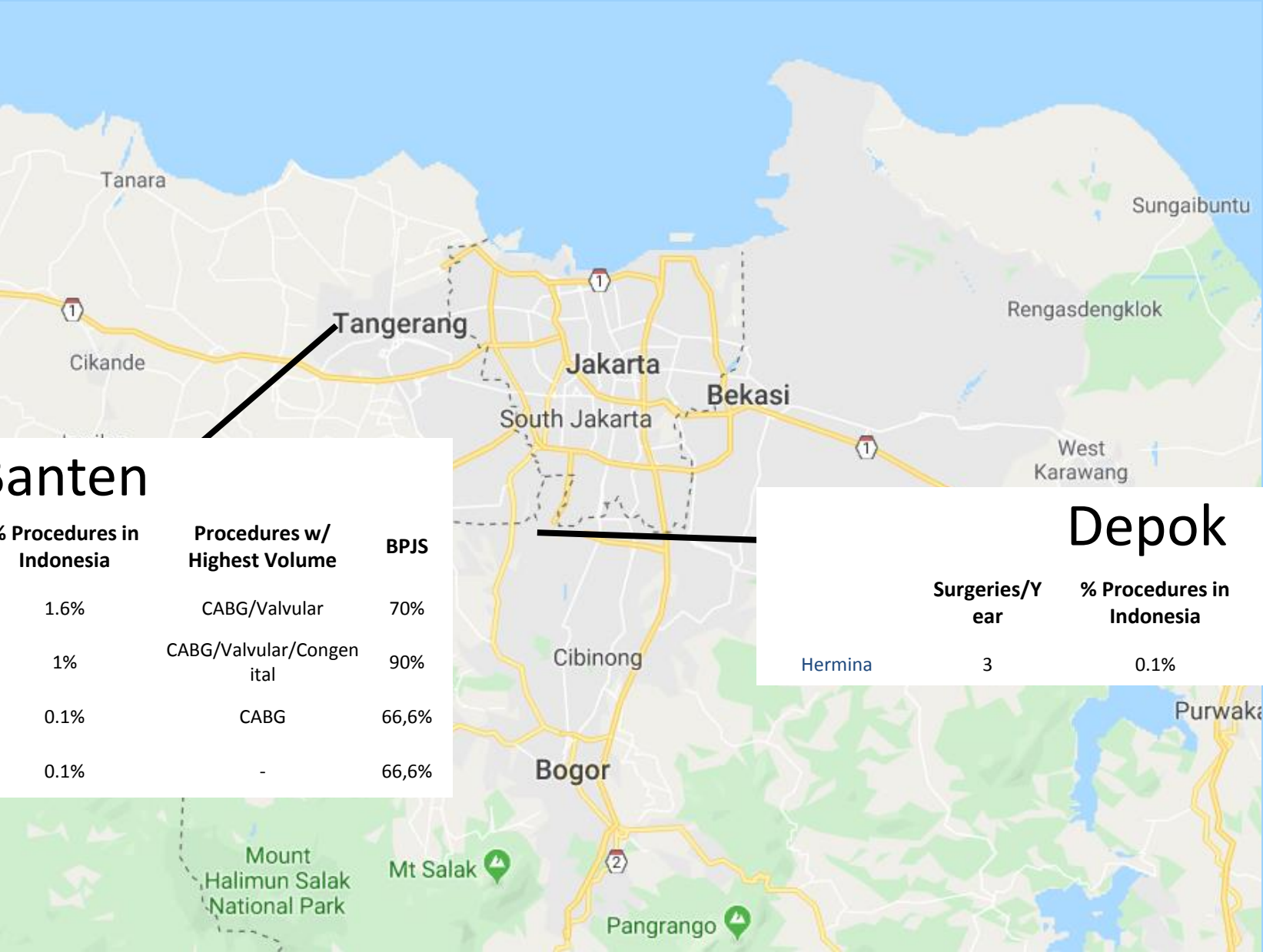
	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
MMC	10	0.2%	CABG	0%
RS Pusat Pertamina	40	0.6%	CABG	0%
RS Pondok Indah	19	0.3%	CABG	0%
Mayapada	24	0.4%	CABG	0%

East Jakarta

	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
Jakarta Heart Center	406	6.4%	CABG/Congenital	-
RSUP Persahabatan	5	0.1%	CABG	100%
RS Omni	70	1.2%	CABG	97%



Hospitals with Dedicated Cardiac Surgery Unit: Jakarta Metropolitan Area (Excl. Jakarta)



Banten

	Surgeries/ Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
Siloam Lippo Karawaci	100	1.6%	CABG/Valvular	70%
Eka Hospital	60	1%	CABG/Valvular/Congen ital	90%
MHT	3	0.1%	CABG	66,6%
Medika BSD	3	0.1%	-	66,6%

Depok

	Surgeries/ Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
Hermina	3	0.1%	PDA	0%

Hospitals with Dedicated Cardiac Surgery Unit: Java & Bali



Bandung

	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RS Hasan Sadikin	192	3%	CABG/Valvular	95%
RS Santosa	120	1.9%	CABG	95%

Semarang

	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RSUP Dr. Kariadi	389	6%	Valvular/CABG	98%

Surabaya

	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RS Dr. Soetomo	260	4.42%	CABG/Congenital	95%
RS PHC	8	0.1%	CABG/Valvular	99%

Solo

	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RSUD Dr. Moewardi	20	0.3%	Valvular	100%
RSAL	50	0.8%	CABG/Valvular	95%

Malang

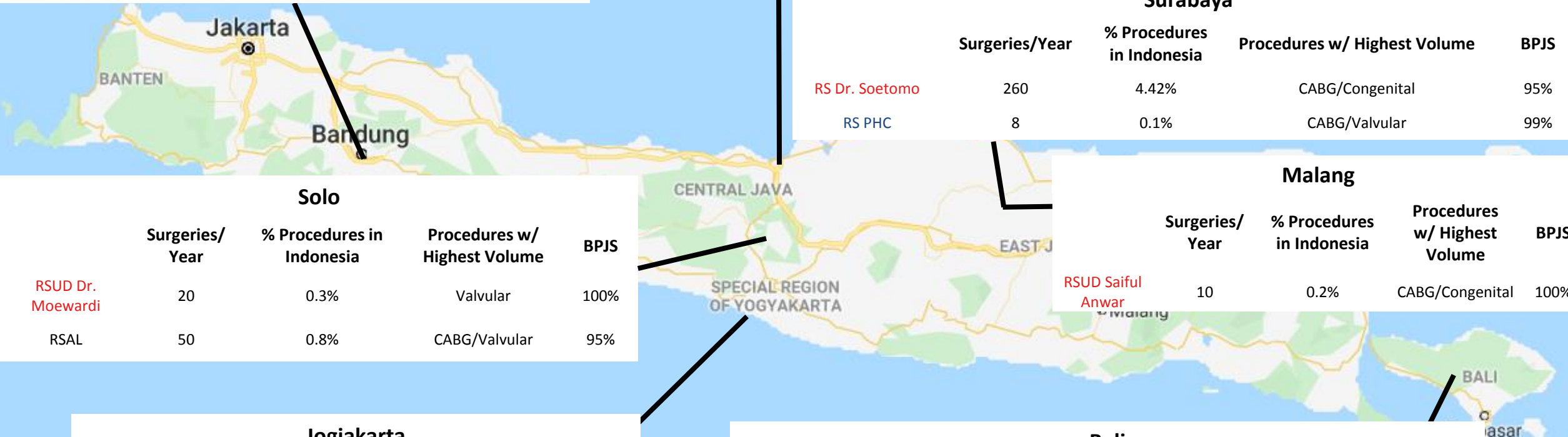
	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RSUD Saiful Anwar	10	0.2%	CABG/Congenital	100%

Jogjakarta

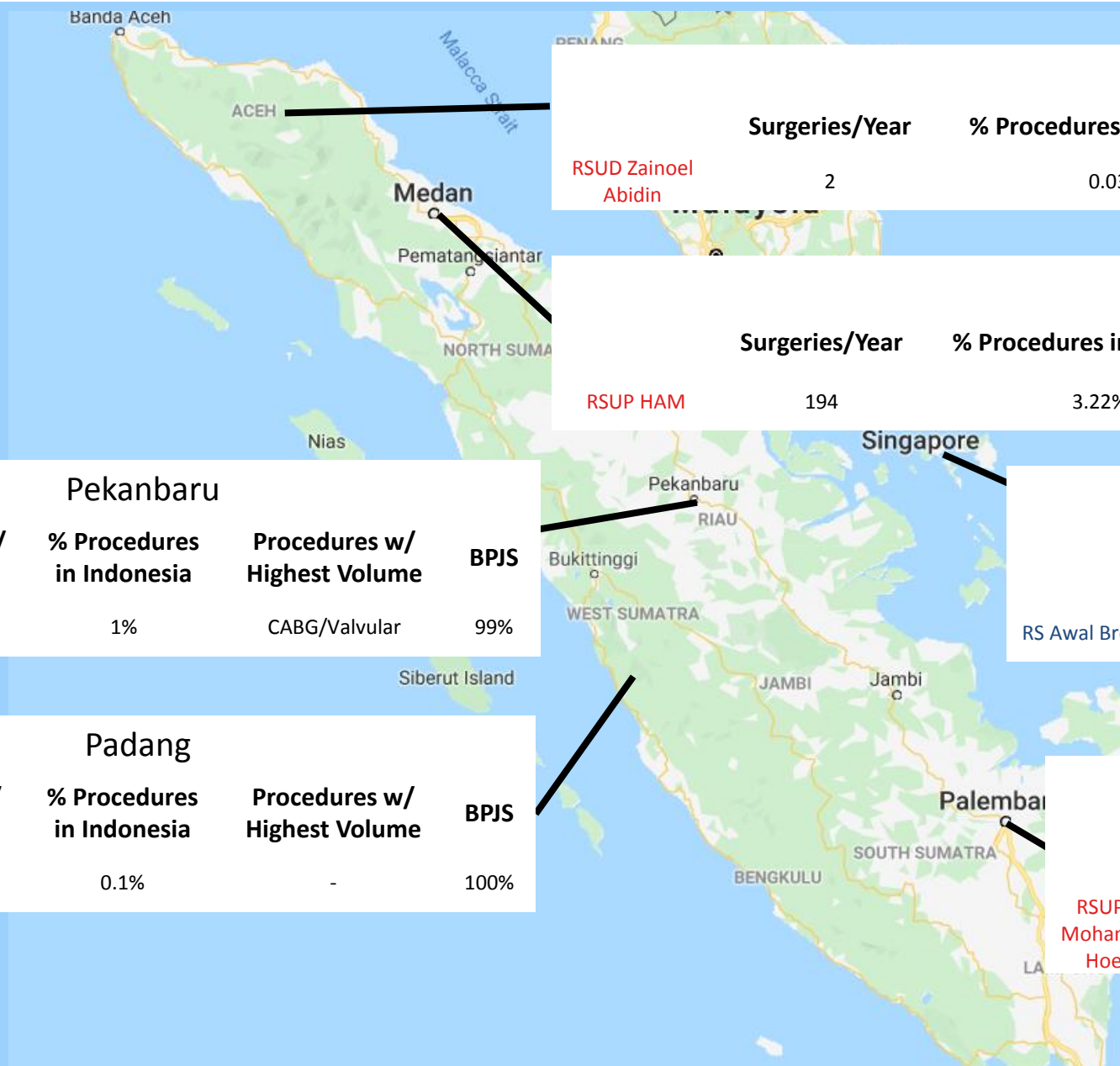
	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RSUP Dr. Sardjito	170	2.7%	-	99%

Bali

	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RSUP Sanglah	140	2.3%	CABG/Valvular/Congenital	100%



Hospitals with Dedicated Cardiac Surgery Unit: Sumatera



Aceh				
	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RSUD Zainoel Abidin	2	0.03%	CABG/Valvular	100%

Medan				
	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RSUP HAM	194	3.22%	CABG/Valvular/Congenital	98%

Pekanbaru				
	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RS Arifin Achmad	60	1%	CABG/Valvular	99%

Batam				
	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RS Awal Bros	19	0.3%	CABG	90%

Padang				
	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RS M Djamil	7	0.1%	-	100%

Palembang				
	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RSUP Dr. Mohammad Hoesin	80	1.33%	Congenital/CABG/Valvular	99%

Hospitals with Dedicated Cardiac Surgery Unit: Kalimantan

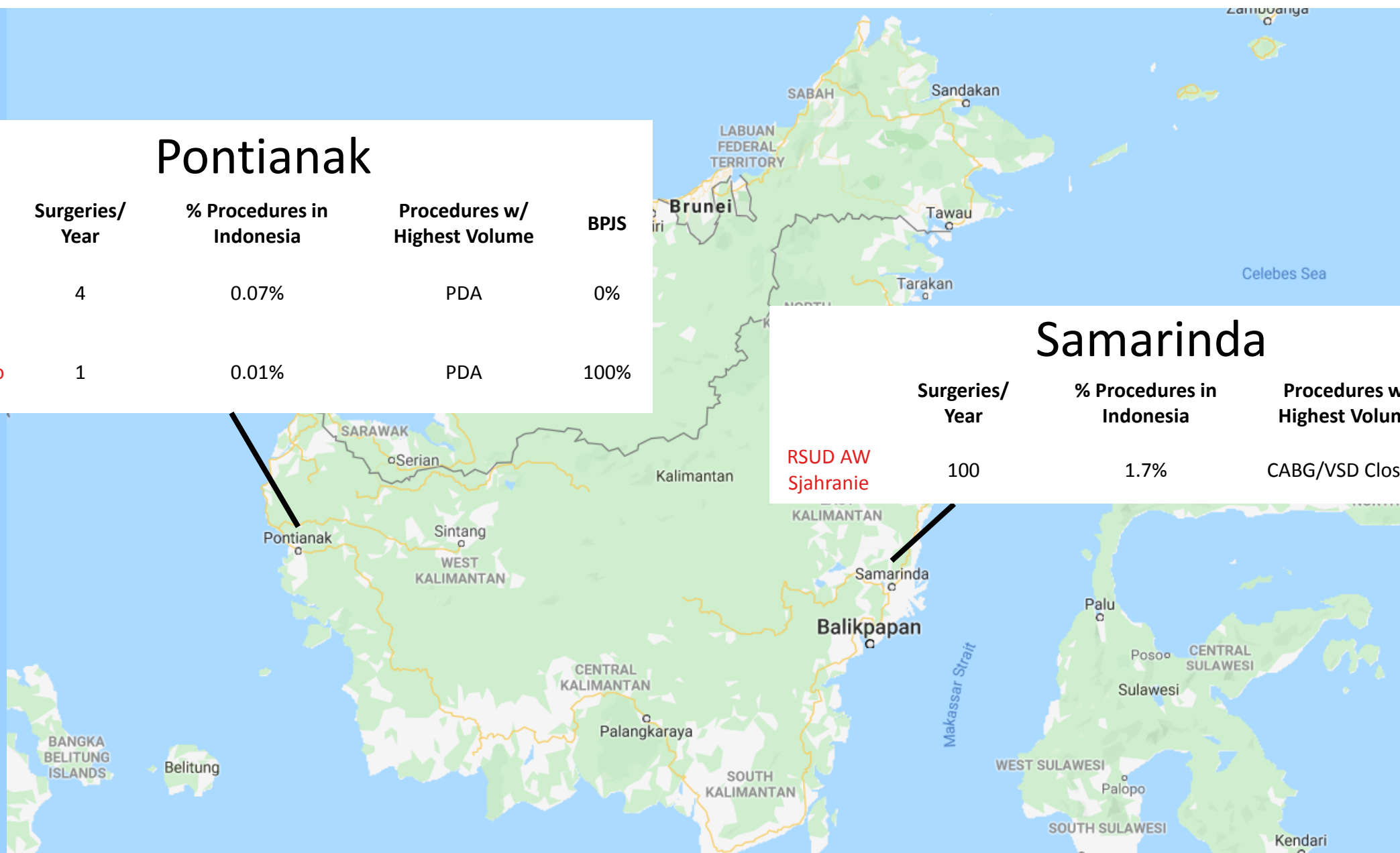


Pontianak

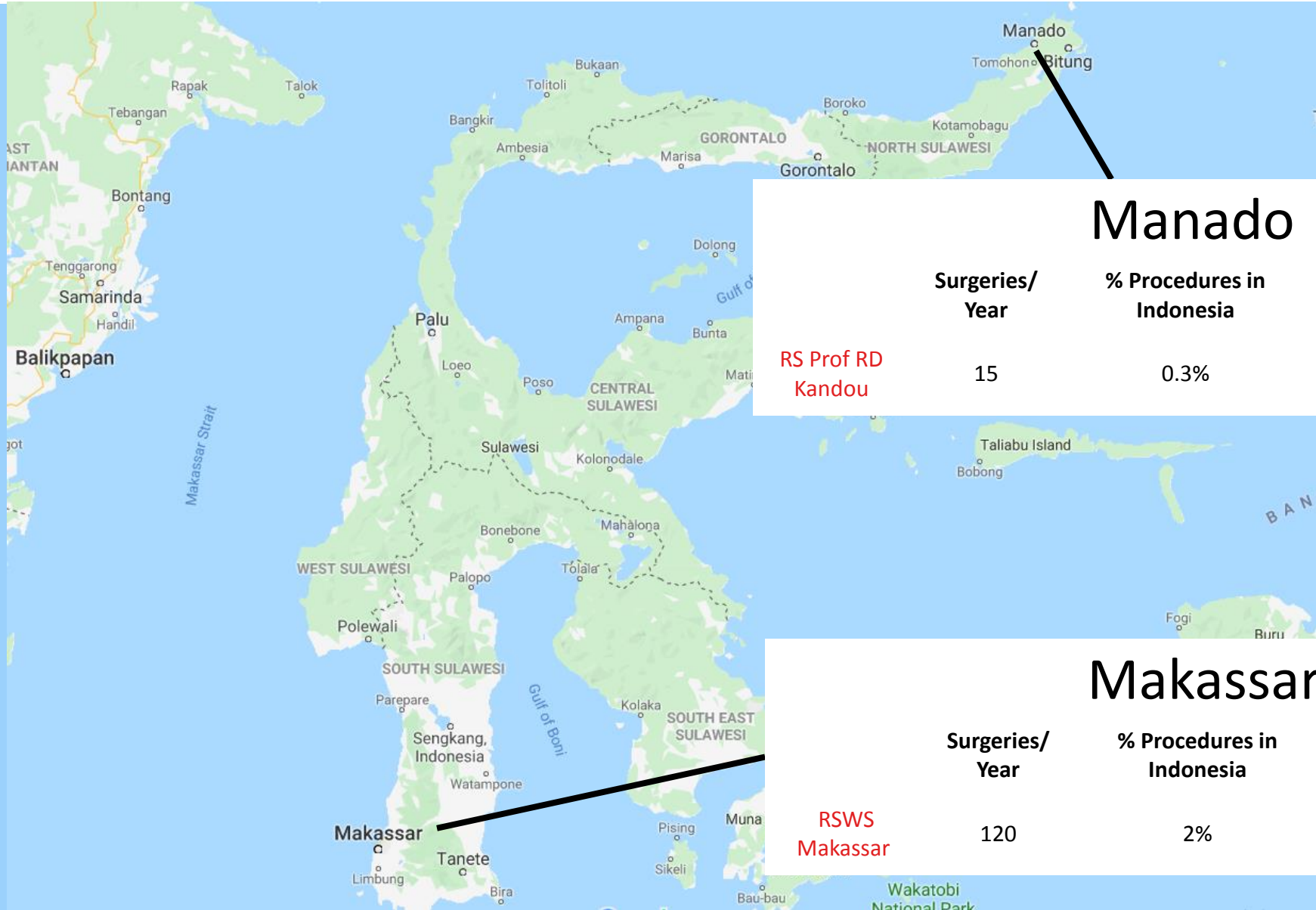
	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RS Antonius	4	0.07%	PDA	0%
RSUD Sudarso	1	0.01%	PDA	100%

Samarinda

	Surgeries/Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RSUD AW Sjahranie	100	1.7%	CABG/VSD Closure	98%



Hospitals with Dedicated Cardiac Surgery Unit: Sulawesi



Manado

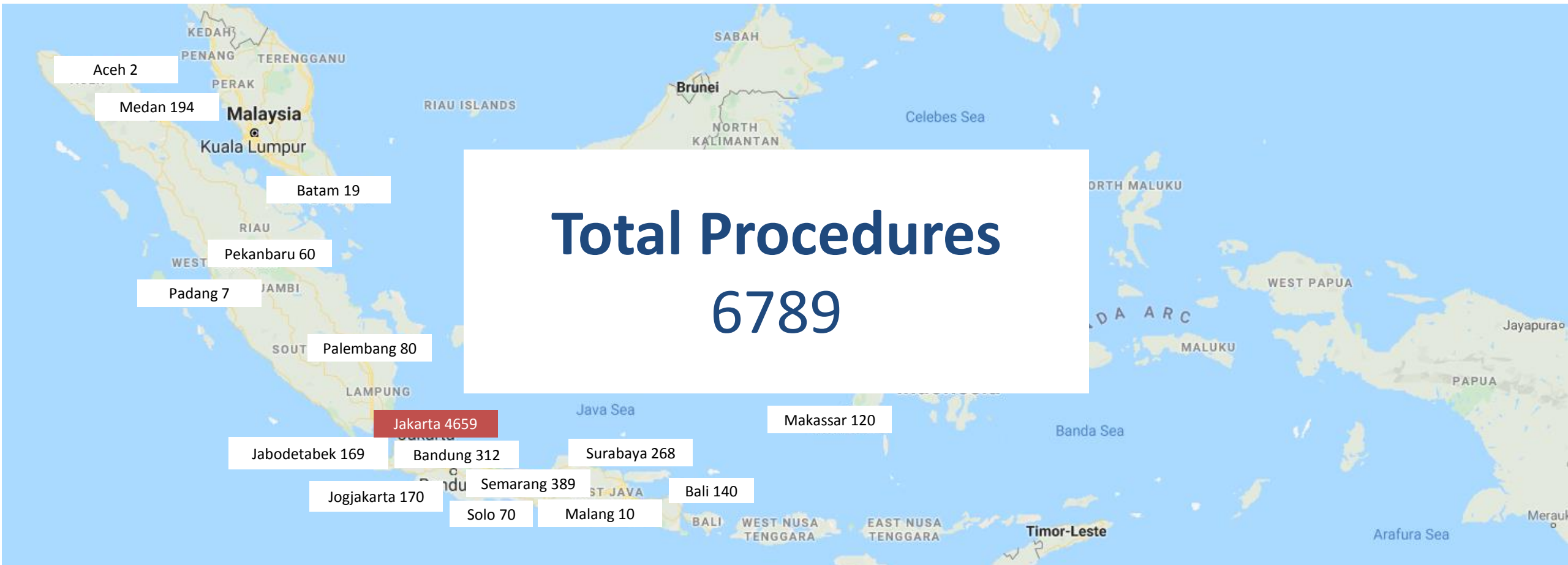
	Surgeries/ Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RS Prof RD Kandou	15	0.3%	CABG/Valvular	100%

Makassar

	Surgeries/ Year	% Procedures in Indonesia	Procedures w/ Highest Volume	BPJS
RSWS Makassar	120	2%	CABG	98%



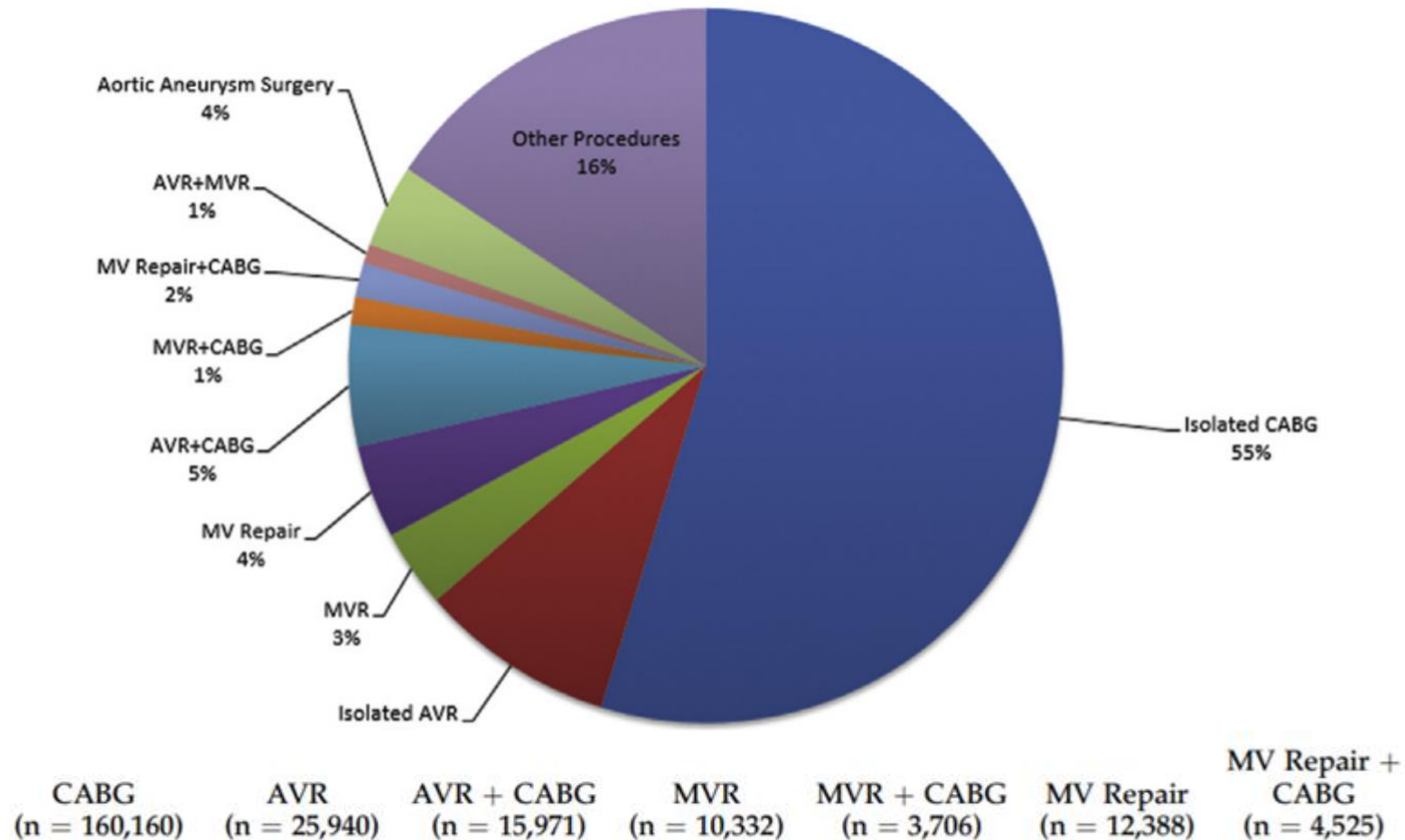
Cardiac Surgeries Nationwide in 2018



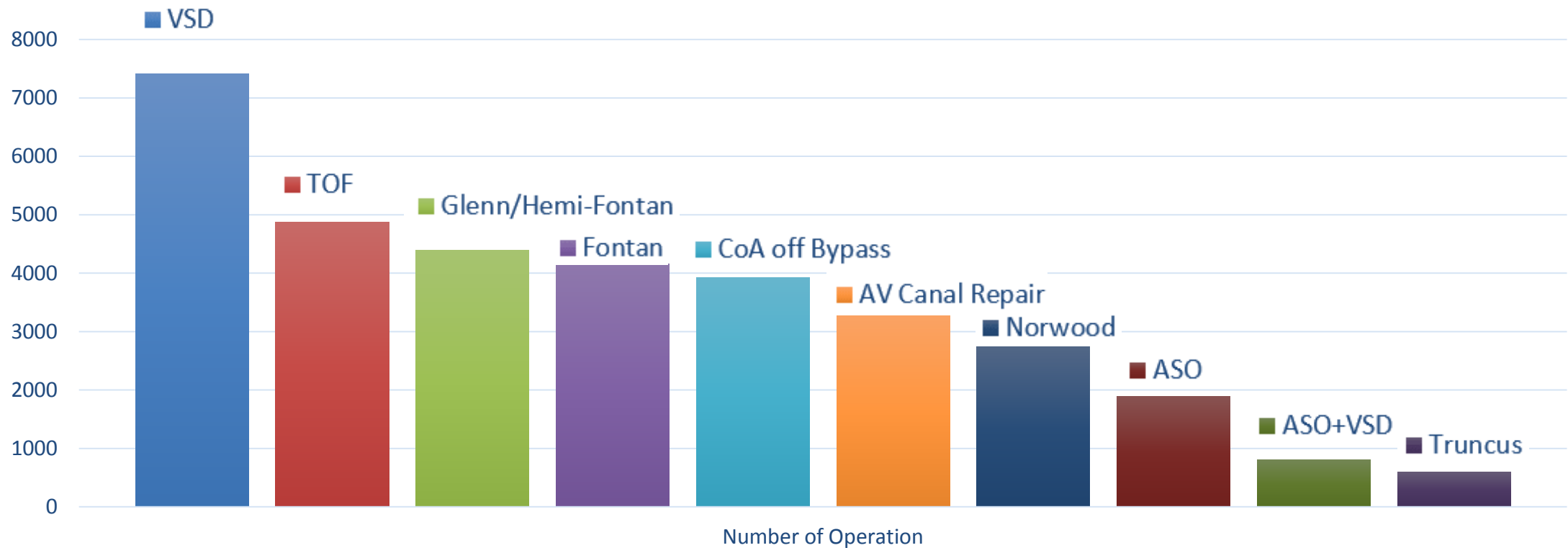
Currently, there are only **25 cardiac surgeries per 1 million population** in Indonesia while the estimated need is **300 cardiac surgeries per 1 million population** (Zilla, 2018)



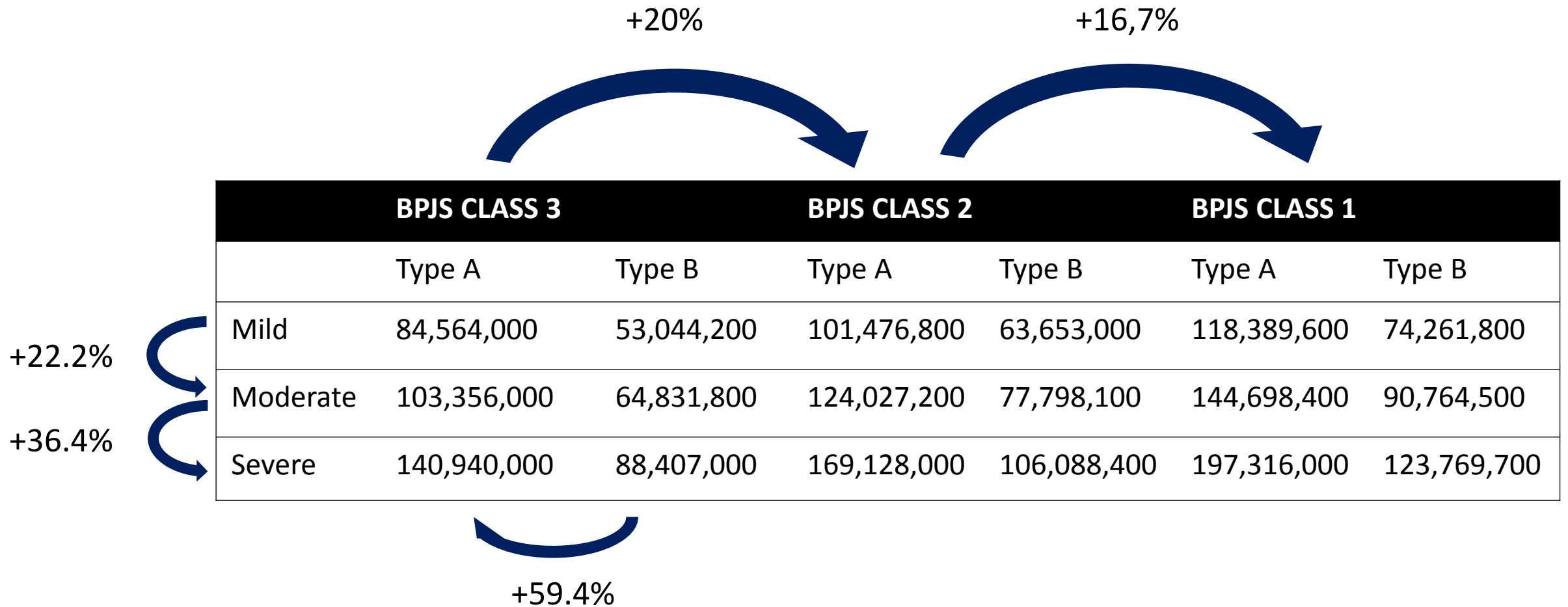
The Society of Thoracic Surgeons Data for Adult Cardiac Surgery 2017



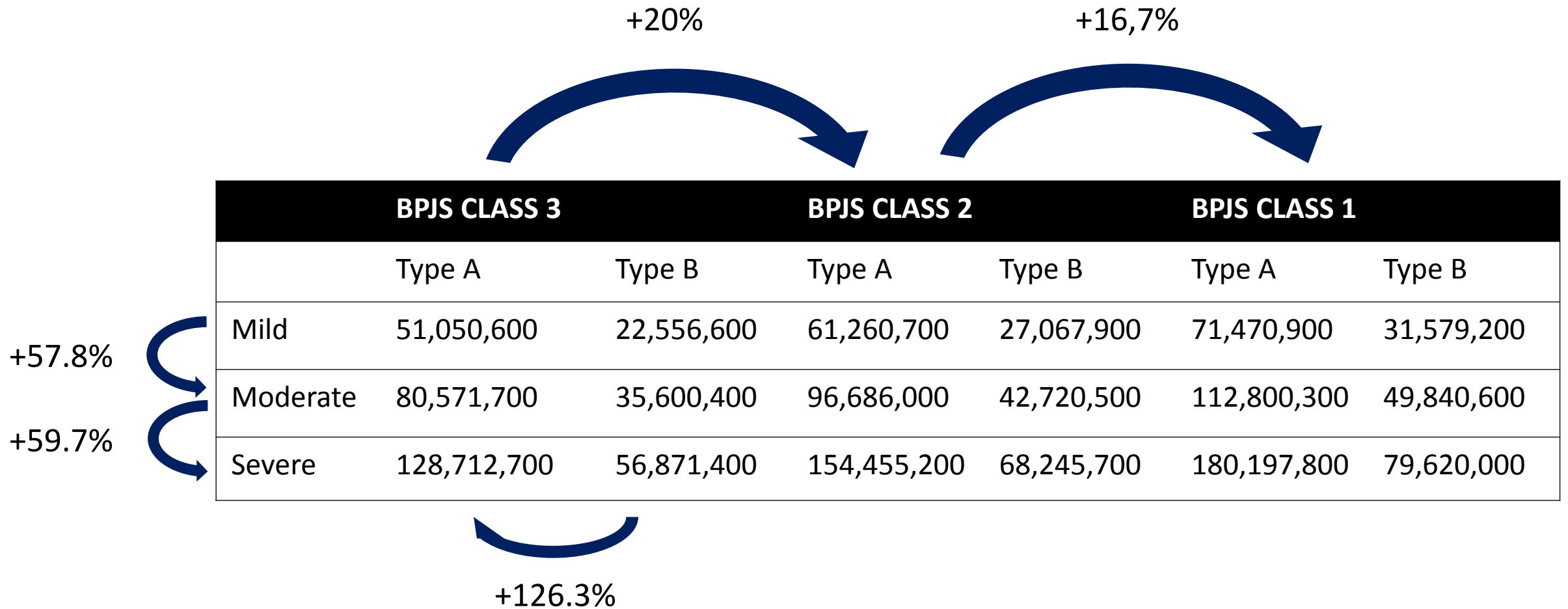
The Society of Thoracic Surgeons Data for Congenital Cardiac Surgery (Januari 2014-December 2017)



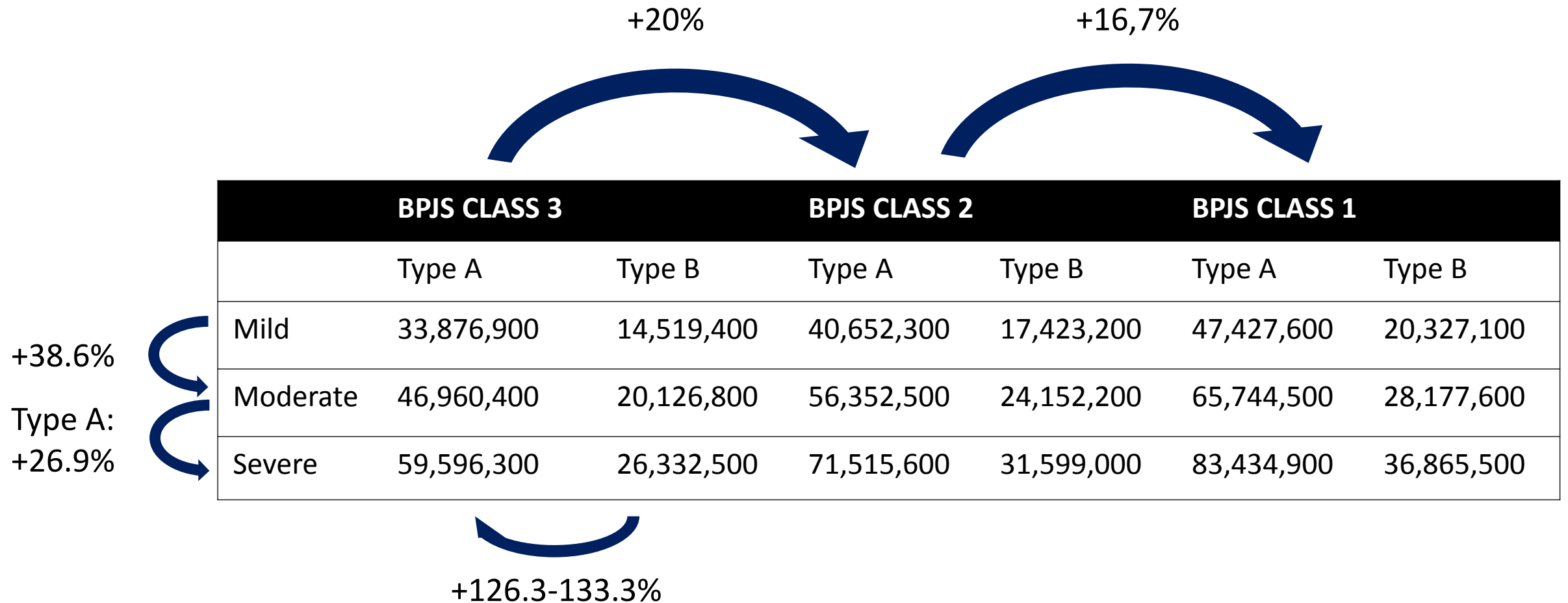
PMK No.64/2016: Coronary Artery Bypass Grafting with Catheterization



PMK No.64/2016: Valve Procedures without Catheterization



PMK No.64/2016: Complex CTV Surgeries on Hearts with Anomalies



10 Tindakan Operasi Jantung Terbanyak PJT RSCM Tahun 2018



No	Jenis Tindakan	Volume	Keterangan (Perbandingan tarif RS & BPJS)
1	Katup Mitral-Aortic	76	High Volume High Cost (Negatif)
2	VSD Closure	73	(Positif)
3	Total Koreksi	72	High Volume High Cost (Negatif)
4	BT - Shunt	51	(Negatif)
5	CABG	41	(Positif)
6	ASD Closure	25	(Positif)
7	CABG+ Katup replace/repair	22	High Volume High Cost (Negatif)
8	PDA Ligasi	21	(Positif)
9	BCPS	24	(Negatif)
10	CAVSD	11	(Negatif)
11	TAPVD	7	(Negatif)

CABG VS CABG+Katup



PROSEDUR BYPASS KORONER TANPA KATETERISASI JANTUNG

Jenis Operasi	Tarif RS (Rerata)	I-1-07-I			I-1-07-II			I-1-07-III		
		Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1
		75,168,000	90,201,600	105,235,200	93,960,000	112,752,000	131,544,000	140,940,000	169,128,000	197,316,000
CABG	102,217,374.18	(27,049,374)	(12,015,774)	3,017,826	(8,257,374)	10,534,626	29,326,626	38,722,626	66,910,626	95,098,626

PROSEDUR KATUP JANTUNG TANPA KATETERISASI JANTUNG

Jenis Operasi	Tarif RS (Rerata)	I-1-04-I (R)			I-1-04-II (S)			I-1-04-III (B)		
		Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1
		51,050,600	61,260,700	71,470,900	80,571,700	96,686,000	112,800,300	128,712,700	154,455,200	180,197,800
CABG+ MVR	125,444,208	(74,393,607.91)	(64,183,507.91)	(53,973,307.91)	(44,872,507.91)	(28,758,207.91)	(12,643,907.91)	3,268,492.09	29,010,992.09	54,753,592.09

- Keterangan harga distributor BMHP rata-rata:

- Oxygenator dewasa Rp 6.820.000
- CE Perimount Aortic/Mitral Bioprosthesis Rp 42.515.000
- ATS Aortic/Mitral Mechanical Prosthesis Rp 17.325.000
- Mitral Annuloplasty Ring Physio II Rp 17.737.500



Software Koding INA-CBG versi 5.1

172.16.14.20/eklam/

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CABG + MVR → Prosedur Katup Jantung Tanpa Kateterisasi Jantung (Sedang)



Tarif Rumah Sakit : Rp 181,115,347

<input type="checkbox"/> Prosedur Non Bedah 0	<input type="checkbox"/> Prosedur Bedah 181115347	<input type="checkbox"/> Konsultasi 0
<input type="checkbox"/> Tenaga Ahli 0	<input type="checkbox"/> Keperawatan 0	<input type="checkbox"/> Penunjang 0
<input type="checkbox"/> Radiologi 0	<input type="checkbox"/> Laboratorium 0	<input type="checkbox"/> Pelayanan Darah 0
<input type="checkbox"/> Rehabilitasi 0	<input type="checkbox"/> Kamar / Akomodasi 0	<input type="checkbox"/> Rawat Intensif 0
<input type="checkbox"/> Obat 0	<input type="checkbox"/> Obat Kronis 0	<input type="checkbox"/> Obat Kemoterapi 0
<input type="checkbox"/> Alkes 0	<input type="checkbox"/> BMHP 0	<input type="checkbox"/> Sewa Alat 0

Menyatakan benar bahwa data tarif yang tersebut di atas adalah benar sesuai dengan kondisi yang sesungguhnya.

Diagnosa (ICD-10):

Atherosclerotic heart disease 125.1 Primer

Mitral valve disease, unspecified 105.9 Sekunder

Congestive heart failure 150.0 Sekunder ✓

Chronic renal failure, unspecified N18.9 Sekunder

Prosedur (ICD-9-CM):

Diagnostic ultrasound of heart 88.72

Implant of pulsation balloon 37.61 ✓

Venous catheterization for renal dialysis 38.95

Hemodialysis 39.95

Aortocoronary bypass of four or more coronary arteries 36.14 ✓

Open heart valvuloplasty of mitral valve without replacement 35.12 ✓

Pulmonary artery pressure monitoring 89.63

Prosedur (ICD-9-CM):

Cari Prosedur

Diagnostic ultrasound of heart 88.72

Implant of pulsation balloon 37.61

Venous catheterization for renal dialysis 38.95

Hemodialysis 39.95

Aortoocoronary bypass of four or more coronary arteries 36.14

Open heart valvuloplasty of mitral valve without replacement 35.12

Pulmonary artery pressure monitoring 89.63

Hapus Klaim

Simpan

Grouper

Hasil Grouper

Info D dina septiani @ 13 Mei 2019 10:03 -- Kelas A -- Tarif : TARIF RSUPN CIPTO MANGUNKUSUMO

Jenis Rawat Rawat Inap Kelas 3 (31 Hari)

Group PROSEDUR KATUP JANTUNG TANPA KATETERISASI JANTUNG (SEDANG)

I-1-04-II Rp 80,571,700

Sub Acute - Rp 0

Chronio - Rp 0

Special Procedure None Rp 0

Special Prosthesis None Rp 0

Special Investigation None Rp 0

Special Drug None Rp 0

[debug]

Total Rp 80,571,700

Final Klaim

Margin: $80.571.700 - 181.115.347 =$
(100.543.647)

*diterapkan kuota, lapor ke komite medik

Operasi Katup



Jenis Operasi	Tarif RS (Rerata)	Top Up	PROSEDUR KATUP JANTUNG TANPA KATETERISASI JANTUNG								
			I-1-04-I (R)			I-1-04-II (S)			I-1-04-III (B)		
			Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1
			51,050,600	61,260,700	71,470,900	80,571,700	96,686,000	112,800,300	128,712,700	154,455,200	180,197,800
Mitral Valve Replace- Repair	120,215,179	-	(69,164,578.91)	(58,954,478.91)	(48,744,278.91)	(39,643,478.91)	(23,529,178.91)	(7,414,878.91)	8,497,521.09	34,240,021.09	59,982,621.09
Double Valve Repair- Replace	178,064,750	-	(127,014,150)	(116,804,050)	(106,593,850)	(97,493,050)	(81,378,750)	(65,264,450)	(49,352,050)	(23,609,550)	2,133,050

- Keterangan harga distributor BMHP rata-rata:

- Oxygenator dewasa Rp.6.820.000
- CE Perimount Aortic/Mitral Bioprosthesis Rp.42.515.000
- ATS Aortic/Mitral Mechanical Prosthesis Rp.17.325.000
- Mitral Annuloplasmy Ring Physio II Rp.17.737.500

MVR + TVR + AVR → Prosedur Katup Jantung Tanpa Kateterisasi Jantung (Sedang)



Tarif Rumah Sakit : Rp 160,747,008

? Prosedur Non Bedah	0	? Prosedur Bedah	160747008	? Konsultasi	0
? Tenaga Ahli	0	? Keperawatan	0	? Penunjang	0
? Radiologi	0	? Laboratorium	0	? Pelayanan Darah	0
? Rehabilitasi	0	? Kamar / Akomodasi	0	? Rawat Intensif	0
? Obat	0	? Obat Kronis	0	? Obat Kemoterapi	0
? Alkes	0	? BNHP	0	? Sewa Alat	0



Menyatakan benar bahwa data tarif yang tersebut di atas adalah benar sesuai dengan kondisi yang sesungguhnya.

Diagnosa (ICD-10):

Mitral stenosis **I05.0** Primer

Anaemia, unspecified **D64.9** Sekunder

Tricuspid insufficiency **I07.1** Sekunder

Aortic (valve) insufficiency **I35.1** Sekunder

Rheumatic heart disease, unspecified **I09.9** Sekunder

Abnormality of albumin **R77.0** Sekunder

Prosedur (ICD-9-CM):

Other replacement of mitral valve **35.24**

Other replacement of tricuspid valve **35.28**

Other replacement of aortic valve **35.22**

Injection of antibiotic **99.21**

Routine chest x-ray, so described **87.44**



Cari Prosedur

Prosedur (ICD-9-CM):

Other replacement of mitral valve 35.24

Other replacement of tricuspid valve 35.28

Other replacement of aortic valve 35.22

Injection of antibiotic 99.21

Routine chest x-ray, so described 87.44

Hapus Klaim

Simpan

Group

Hasil Grouper

Info 0	dina septiani @ 28 Jan 2019 09:36 -- Kelas A -- Tarif : TARIF RSUPN CIPTO MANGUNKUSUMU			
Jenis Rawat	Rawat Inap Kelas 3 (11 Hari)			
Group	PROSEDUR KATUP JANTUNG TANPA KATETERISASI JANTUNG (SEDANG)	I-1-04-II	Rp	80,571,700
Sub Acute	-	-	Rp	0
Chronic	-	-	Rp	0
Special Procedure	None	-	Rp	0
Special Prosthesis	None	-	Rp	0
Special Investigation	None	-	Rp	0
Special Drug	None	-	Rp	0
[debus]			Total Rp	80,571,700

Final Klaim

$$\text{Margin: } 80.571.700 - 160.747.008 = (80.175.308)$$

*diterapkan kuota, lapor ke komite medik

Operasi pada Kelainan Jantung Bawaan



Jenis Operasi	Tarif RS (Rerata)	Top Up	PROSEDUR KARDIOTORASIK LAIN								
			I-1-06-I			I-1-06-II			I-1-06-III		
			Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1
			48,292,200	57,950,600	67,609,100	69,955,200	83,946,200	97,937,300	83,469,500	100,163,400	116,857,300
VSD Closure	78,954,483	48,292,200	17,629,917	27,288,317	36,946,817	39,292,917	53,283,917	67,275,017	52,807,217	69,501,117	86,195,017
ASD Closure	74,651,377	48,292,200	21,933,023	31,591,423	41,249,923	43,596,023	57,587,023	71,578,123	57,110,323	73,804,223	90,498,123



Operasi pada Kelainan Jantung Bawaan

Jenis Operasi	Tarif RS (Rerata)	Top Up	PROSEDUR PEMBULUH DARAH TORASIK KOMPLEKS								
			I-1-12-I			I-1-12-II			I-1-12-III		
			Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1
			25,661,800	30,794,100	35,926,500	41,910,900	50,293,000	58,675,200	55,140,000	66,168,100	77,196,100
BT Shunt	73,612,861		(47,951,061)	(42,818,761)	(37,686,361)	(31,701,961)	(23,319,861)	(14,937,661)	(18,472,861)	(7,444,761)	3,583,239

- Keterangan harga distributor BMHP rata-rata:
 - Vascutex Seal PTFE 5mm Rp.11,962,500

OPERASI KARDIOTORASIK KOMPLEKS PADA JANTUNG ANOMALI

Jenis Operasi	Tarif RS (Rerata)	Top Up	OPERASI KARDIOTORASIK KOMPLEKS PADA JANTUNG ANOMALI								
			I-1-03-I (R)			I-1-03-II (S)			I-1-03-III (B)		
			Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1
			33,876,900	40,652,300	47,427,600	46,960,400	56,352,500	65,744,500	59,596,300	71,515,600	83,434,900
Total Koreksi	88,858,031	16,938,500	(38,042,631)	(31,267,231)	(24,491,931)	(24,959,131)	(15,567,031)	(6,175,031)	(12,323,231)	(403,931)	11,515,369
Rastelli	154,645,125		(120,768,225)	(113,992,825)	(107,217,525)	(107,684,725)	(98,292,625)	(88,900,625)	(95,048,825)	(83,129,525)	(71,210,225)
CAVSD	88,658,129		(54,781,229)	(48,005,829)	(41,230,529)	(41,697,729)	(32,305,629)	(22,913,629)	(29,061,829)	(17,142,529)	(5,223,229)
Fontan	85,300,357		(51,423,457)	(44,648,057)	(37,872,757)	(38,339,957)	(28,947,857)	(19,555,857)	(25,704,057)	(13,784,757)	(1,865,457)
TAPVD	81,359,205		(47,482,305)	(40,706,905)	(33,931,605)	(34,398,805)	(25,006,705)	(15,614,705)	(21,762,905)	(9,843,605)	2,075,695
Arterial switch	177,974,491		(144,097,591)	(137,322,191)	(130,546,891)	(131,014,091)	(121,621,991)	(112,229,991)	(118,378,191)	(106,458,891)	(94,539,591)

- Keterangan harga distributor BMHP rata-rata:
 - Oxygenator pediatric/infant Rp.6.820.000
 - ePTFE Patch Rp.6.435.000
 - Contegra/Medtronic Rp.41.250.000



Diagnosa	Prosedur	Tarif JKN			
		Biaya RS	Top Up	Tarif	Total Tarif
Tetralogy of Fallot	Total Repair of Tetralogy Fallot (35.81)/Total Koreksi	104.230.000	16.938.500	33.876.900	50.815.400
Atrioventricular septal defect	Repair of endocardial cushion defect with tissue graft (35.63)/CAVSD	88.553.000	-	33.876.900	33.876.900
Ventricular Septal Defect + Pulmonary Stenosis	Repair of septal defect of heart with prosthesis	78.954.483	48.292.200	48.292.200	96.584.400
Ventricular Septal Defect + Atrial Septal Defect	Repair of septal defect of heart with prosthesis	74.651.377	48.292.200	48.292.200	96.584.400

Aneurisma/diseksio aorta



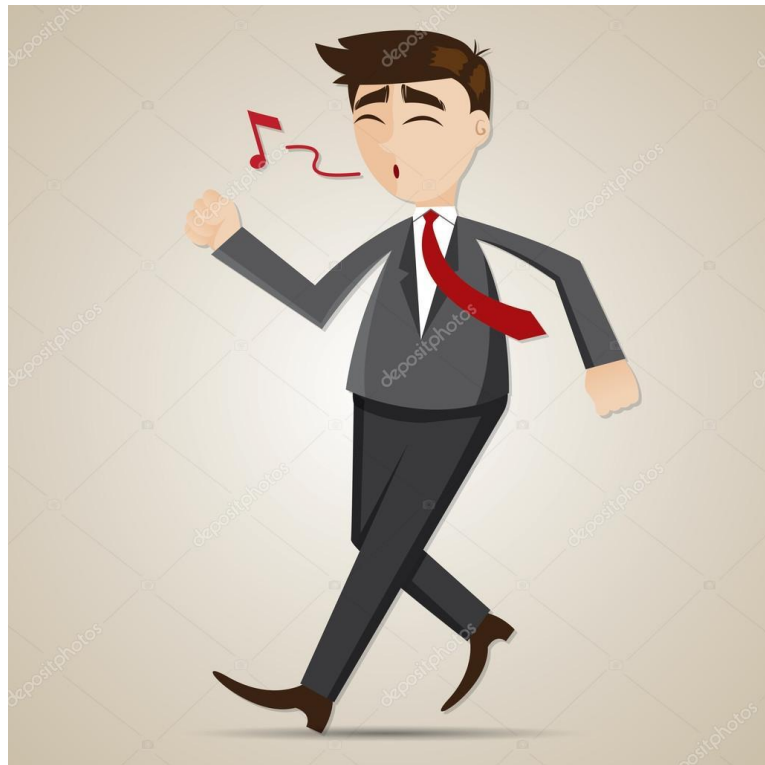
Jenis Operasi	Tarif RS (Rerata)	Top Up	PROSEDUR KATUP JANTUNG TANPA KATETERISASI JANTUNG								
			I-1-04-I (R)			I-1-04-II (S)			I-1-04-III (B)		
			Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1
			51,050,600	61,260,700	71,470,900	80,571,700	96,686,000	112,800,300	128,712,700	154,455,200	180,197,800
Bentall	152,589,257	-	(101,538,656.84)	(91,328,556.84)	(81,118,356.84)	(72,017,556.84)	(55,903,256.84)	(39,788,956.84)	(23,876,556.84)	1,865,943.16	27,608,543.16

Jenis Operasi	Tarif RS (Rerata)	Top Up	PROSEDUR PEMBULUH DARAH TORASIK KOMPLEKS								
			I-1-12-I (R)			I-1-12-II (S)			I-1-12-III (B)		
			Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1	Kelas 3	Kelas 2	Kelas 1
			25,661,800	30,794,100	35,926,500	41,910,900	50,293,000	58,675,200	55,140,000	66,168,100	77,196,100
Ascending aortic replacement/ David Procedure/ Hemiarch/ Totalarch	132,939,798		(107,277,998)	(102,145,698)	(97,013,298)	(91,028,898)	(82,646,798)	(74,264,598)	(77,799,798)	(66,771,698)	(55,743,698)



Penutup dan Saran

1. >90% operasi jantung di Indonesia dibiayai oleh BPJS
2. Operasi jantung dilaksanakan di tipe A dan tipe B
3. Kasus kompleks dan berbiaya tinggi cenderung dirujuk ke tipe rumah sakit yang lebih tinggi, namun kasus dengan margin positif → *Keep* → *waiting list* panjang di Tipe B
4. Kuota diterapkan untuk mengendalikan biaya kerja sama dengan komite medik
5. Masalah sering terjadi pada kasus emergensi yang berbiaya tinggi seperti pada kasus diseksi aorta atau kelainan kongenital yang membutuhkan operasi segera
6. Terdapat *grouping* yang tidak sesuai pada jenis operasi yang hampir sama pada operasi katup dan kongenital
7. Tidak ada *grouping* yang mengakomodir prosedur multipel
8. Perlu segera disahkan reklasifikasi yang telah diajukan perhimpunan



VS





TERIMA KASIH