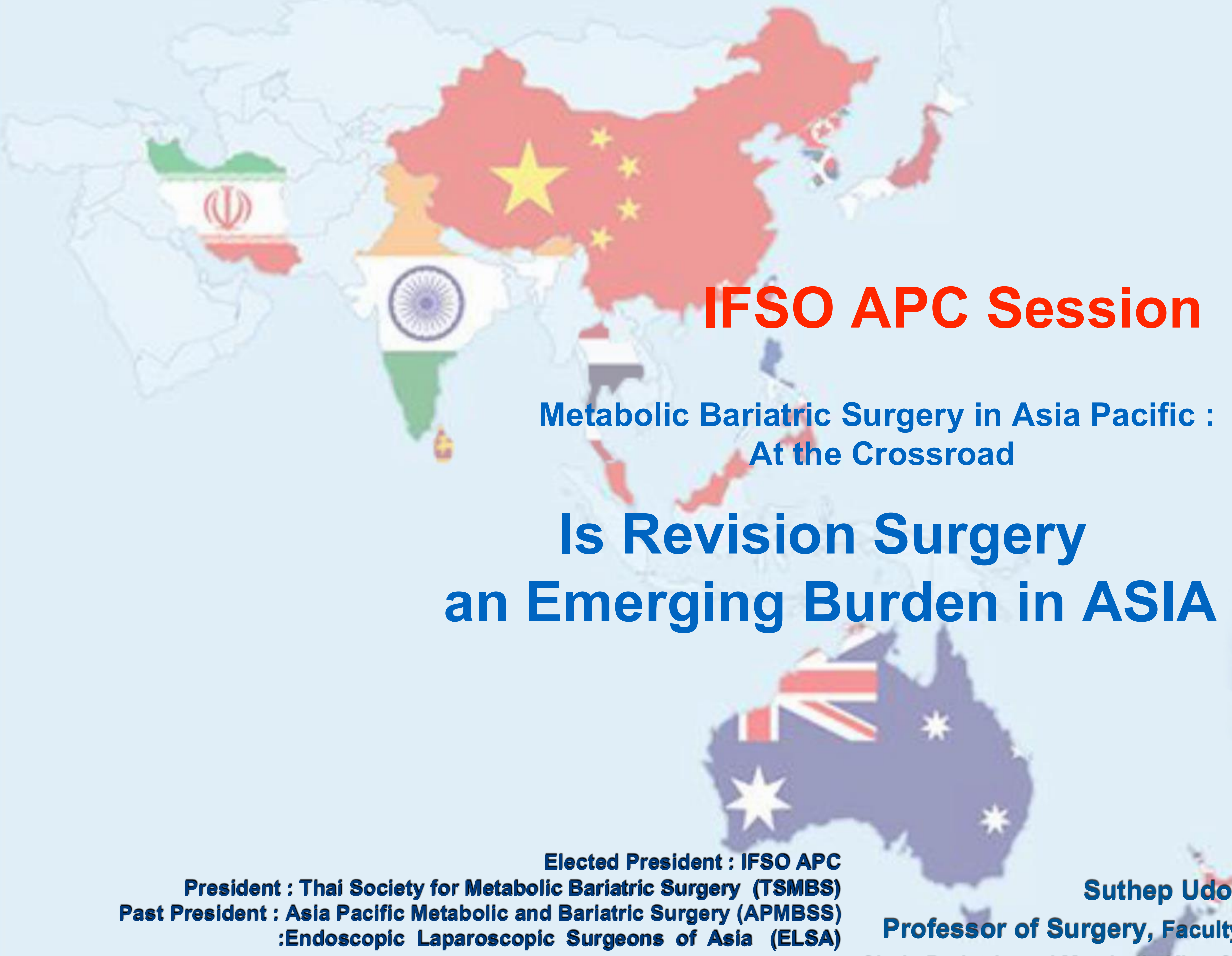




IFSO APC Session

Metabolic Bariatric Surgery in Asia Pacific :
At the Crossroad

Is Revision Surgery an Emerging Burden in ASIA

Elected President : IFSO APC

President : Thai Society for Metabolic Bariatric Surgery (TSMBS)

Past President : Asia Pacific Metabolic and Bariatric Surgery (APMBSS)

:Endoscopic Laparoscopic Surgeons of Asia (ELSA)

Suthep Udomsawaengsup, MD. FRCST, FACS

Professor of Surgery, Faculty of Medicine Chulalongkorn University



**XXIX IFSO
World Congress**

TORONTO2026

**The Future of Obesity Management:
From Weight Loss to Health Gain**



Disclosure Slide

☒	No, nothing to disclose
☐	Yes, please specify:





CHULA BMI

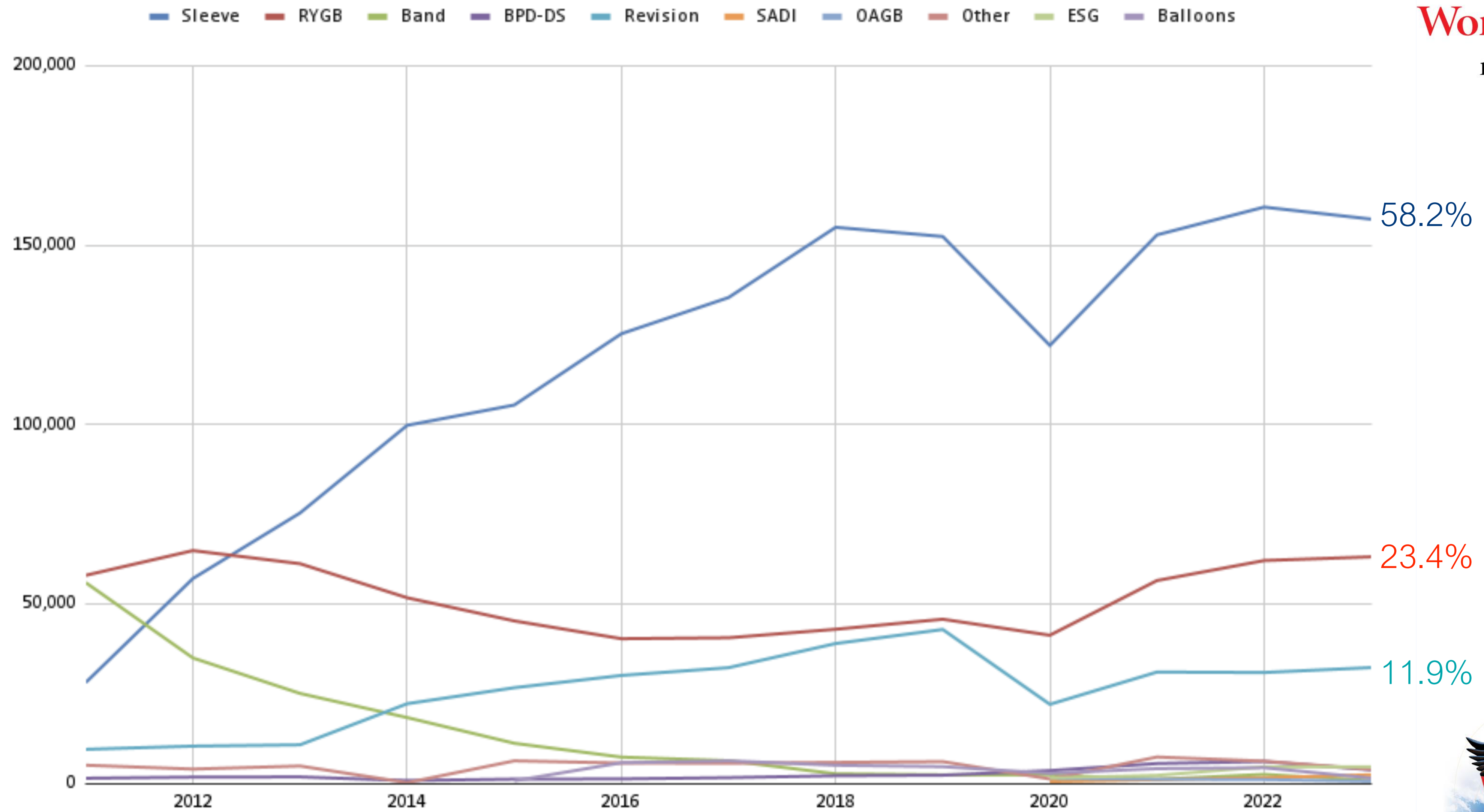
Since 2007



หน่วยปฏิบัติการวิจัยทางการแพทย์เพื่อบำบัดรักษา
ป้องกันโรคอ้วนและโรคที่เกี่ยวข้องทางเมตาบอลิคแบบครบวงจร
โรงพยาบาลจุฬาลงกรณ์ สภากาชาดไทย

*Research Unit for the Treatment of Obesity and Metabolic Disease
Chulalongkorn University*

The ASMBS total bariatric procedure numbers are based on the best estimation from available data



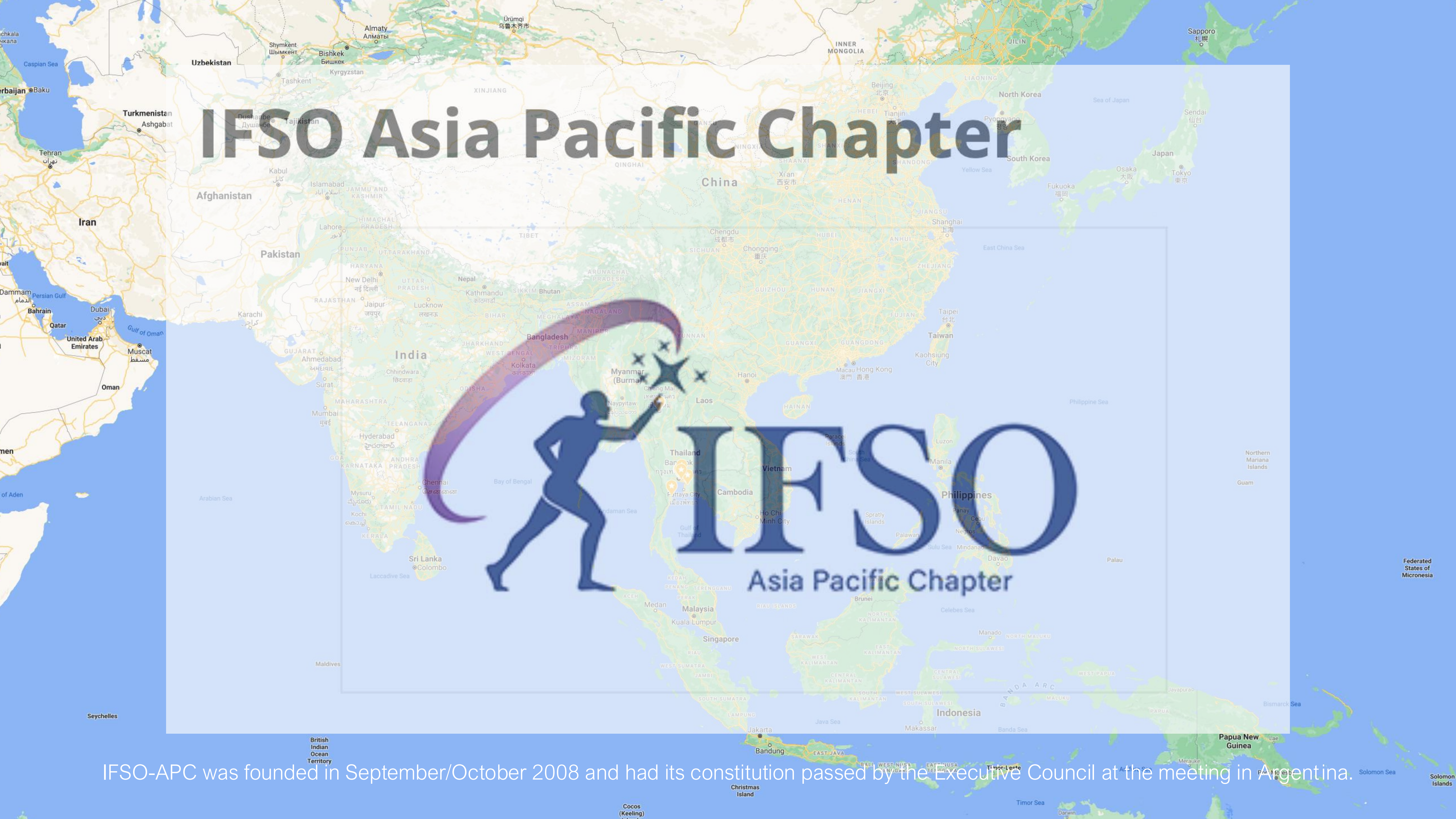
Metabolic and Bariatric surgery Asia



2004 Asia Pacific Bariatric Surgery Society (APBSS) inaugurated

2005 the Asia Pacific consensus

2008 Asia Pacific Metabolic and Bariatric Surgery Society (APMBSS) in 2008



IFSO Asia Pacific Chapter

IFSO
Asia Pacific Chapter

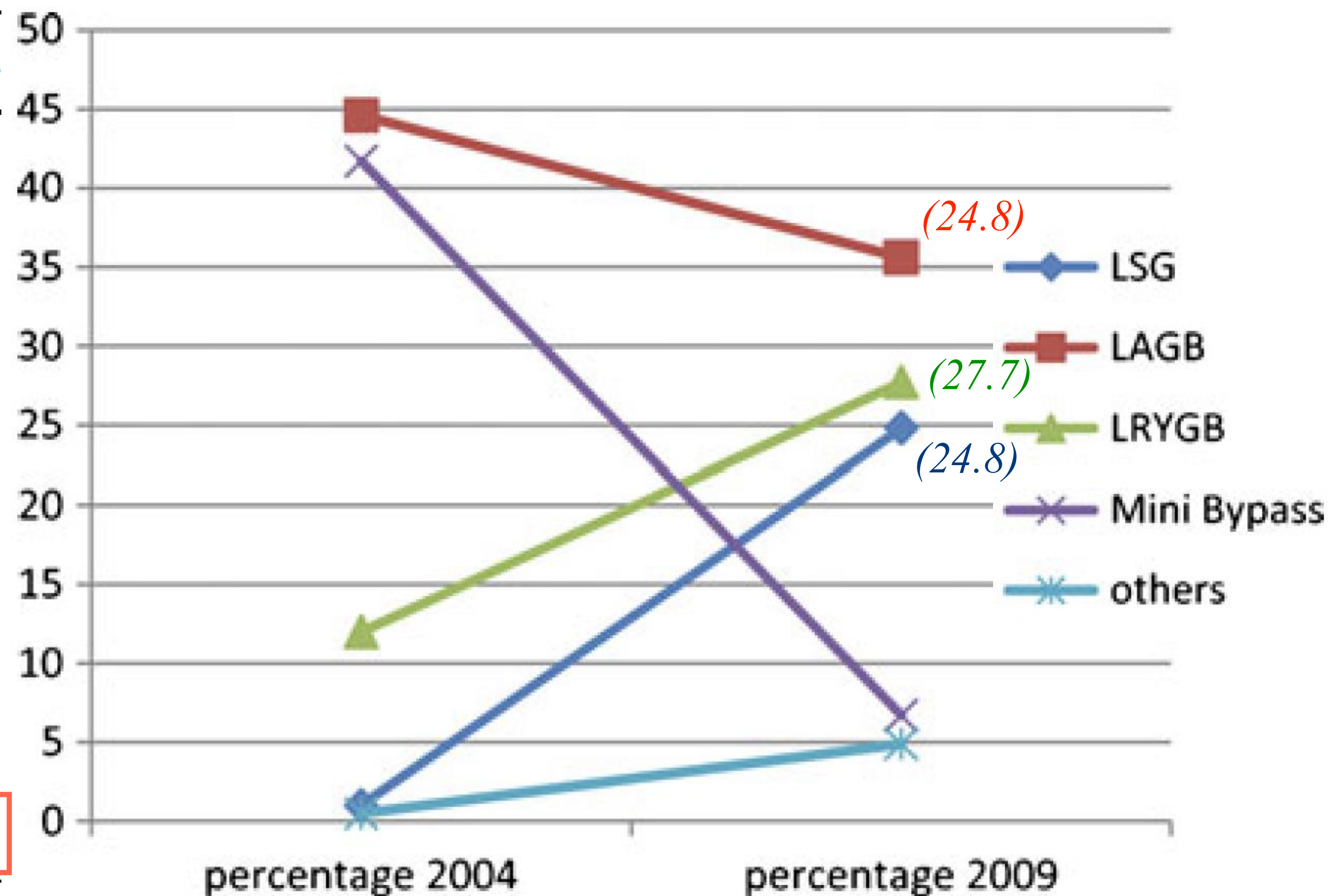
IFSO-APC was founded in September/October 2008 and had its constitution passed by the Executive Council at the meeting in Argentina.

Bariatric Surgery in Asia in the Last 5 Years (2005–2009)

Number of bariatric surgery procedures and number of surgeons performing the procedure (2005–2009)

Trends of bariatric procedures (%)

Country	No. of procedures	No. of surgeons
Japan	353	12
Singapore	280	12
Taiwan	2,468	9
Vietnam ^a	45	NDA
Thailand	420	12
South Korea	1,643	23
Philippines	479	15
Malaysia ^b	17	12
Indonesia ^a	50	NDA
India ^b	530	50
Hong Kong	313	10
Total	6,598	155



Frequency of obese and diabetes patients, start year of bariatric/metabolic surgery, and number of bariatric surgeons

Country	Frequency		Start year (laparoscopic)	Number	
	BMI ≥ 30	Diabetes		Surgeons	Institutes
East Asia			1974 (1998)	562 (34.3%)	324 (37.3%)
Japan	4.3%	10.1%	1982 (2000)	41	36
Korea	4.7%	9.5%	2003 (2003)	87	31
China	6.2%	9.4%	1982 (2000)	300	200
Taiwan	8.2%	11.8%	1974 (1998)	114	47
Hong Kong	3.7%	10.3%	2002 (2002)	20	10
Southeast Asia			1996 (2001)	123 (7.5%)	86 (9.9%)
Philippines	6.4%	5.8%	2001 (2004)	30	20
Malaysia	15.6%	9.8%	1996 (2001)	31	28
Singapore	6.1%	9.1%	1987 (2001)	25	9
Indonesia	6.9%	7.0%	2002 (2002)	7	6
Thailand	10.0%	9.6%	2003 (2005)	30	23
South Asia					
India	3.9%	7.8%	2000 (2000)	341 (20.8%)	37 (4.3%)
Oceania					
Australia	29.0%	7.3%	1962 (1992)	250 (15.2%)	151 (17.4%)
West Asia			1985 (1995)	364 (22.2%)	271 (31.1%)
KSA	35.4%	14.4%	1985 (1995)	70	30
UAE	31.7%	8.0%	2001 (2001)	76	28
Qatar	41.0%	12.8%	2011 (2011)	8	3
Kuwait	38.3%	14.7%	1997 (1999)	60	10
				150	200
Total				1640	869

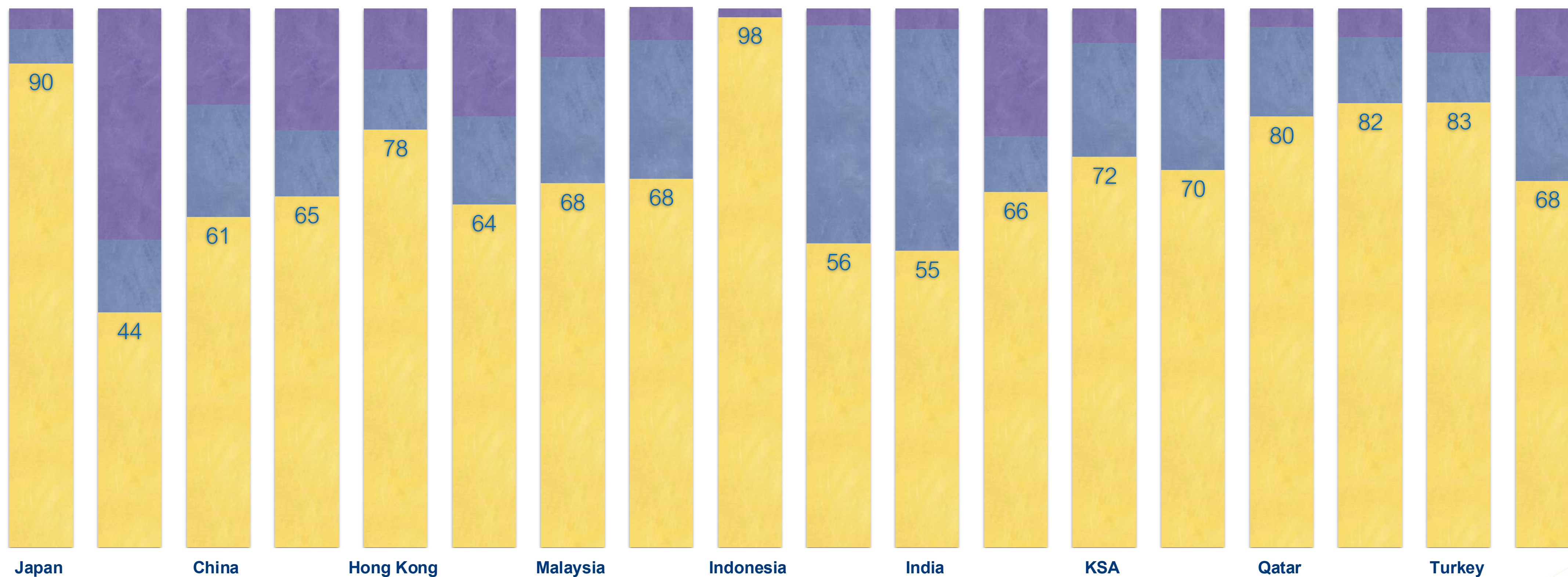
Table 2 Indications of bariatric and metabolic surgeries, and public health insurance coverage of bariatric and/or metabolic surgeries

Country	Indication		Public health insurance coverage	
	Bariatric surgery (BMI)	Metabolic surgery (BMI)	Bariatric surgery	Metabolic surgery
East Asia				
Japan	≥ 35	≥ 32 with DM or other two diseases	Covered (only LSG)	Not covered
Korea	≥ 35 or ≥ 30 with disease	≥ 27.5 with DM	Not covered	Not covered
China	≥ 32.5	≥ 27.5 with DM or other two diseases	Not covered*	Not covered*
Taiwan	≥ 37 or ≥ 32 with diseases	≥ 32.5 or ≥ 27.5 with DM or other diseases	Partially covered	Not covered
Hong Kong	≥ 35 or ≥ 30 with two diseases	≥ 27.5 with uncontrolled DM	Not covered	None
Southeast Asia				
Philippines	≥ 37	≥ 32	Not covered	Not covered
Malaysia	≥ 35	≥ 32 with DM or other two diseases	Not covered	Not covered
Singapore	≥ 37.5 or ≥ 32.5 with disease	≥ 27.5	Covered	Not covered
Indonesia	≥ 35	≥ 30 with uncontrolled DM or MS	Not covered	Not covered
Thailand	≥ 35	≥ 32 with DM or other two diseases	Not covered	Not covered
South Asia				
India	≥ 37.5 or ≥ 32.5 with diseases	≥ 27.5	Covered	Not covered
Oceania				
Australia	≥ 40 or ≥ 35 with disease	≥ 30 with disease or bad family history or Asian	Covered**	Covered**
West Asia				
KSA	≥ 40	≥ 35 with DM or other diseases	Covered#	Covered#
UAE	≥ 40 or ≥ 35 with diseases	None	Covered	None
Qatar	≥ 40 or ≥ 35 with disease or ≥ 30 with uncontrolled DM	None	Covered	None
Kuwait	≥ 40	≥ 35 with DM or other diseases or ≥ 30 with severe MS	Covered#	Covered#
Turkey	≥ 35	None	Covered	None

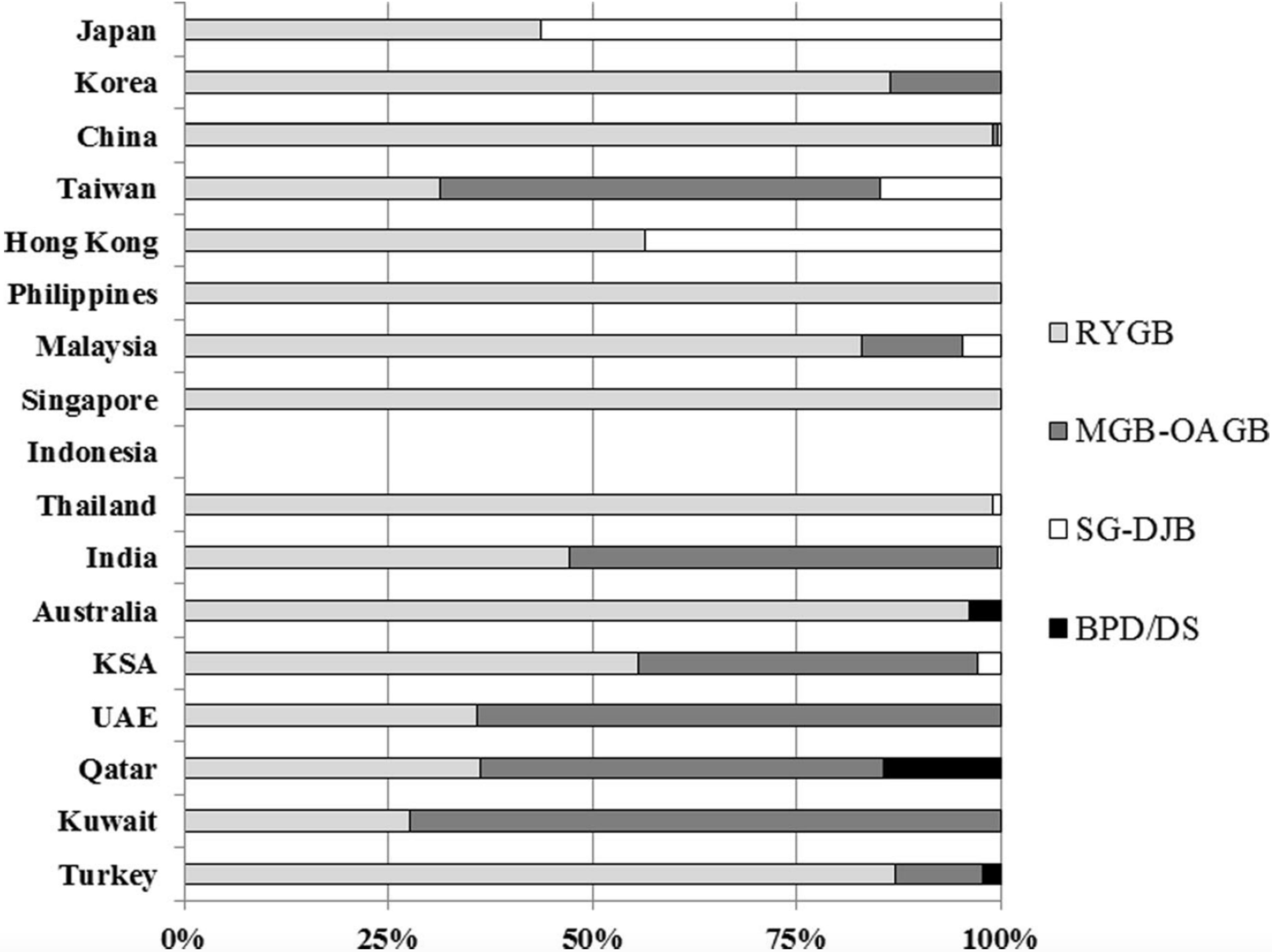
Others

RYGB

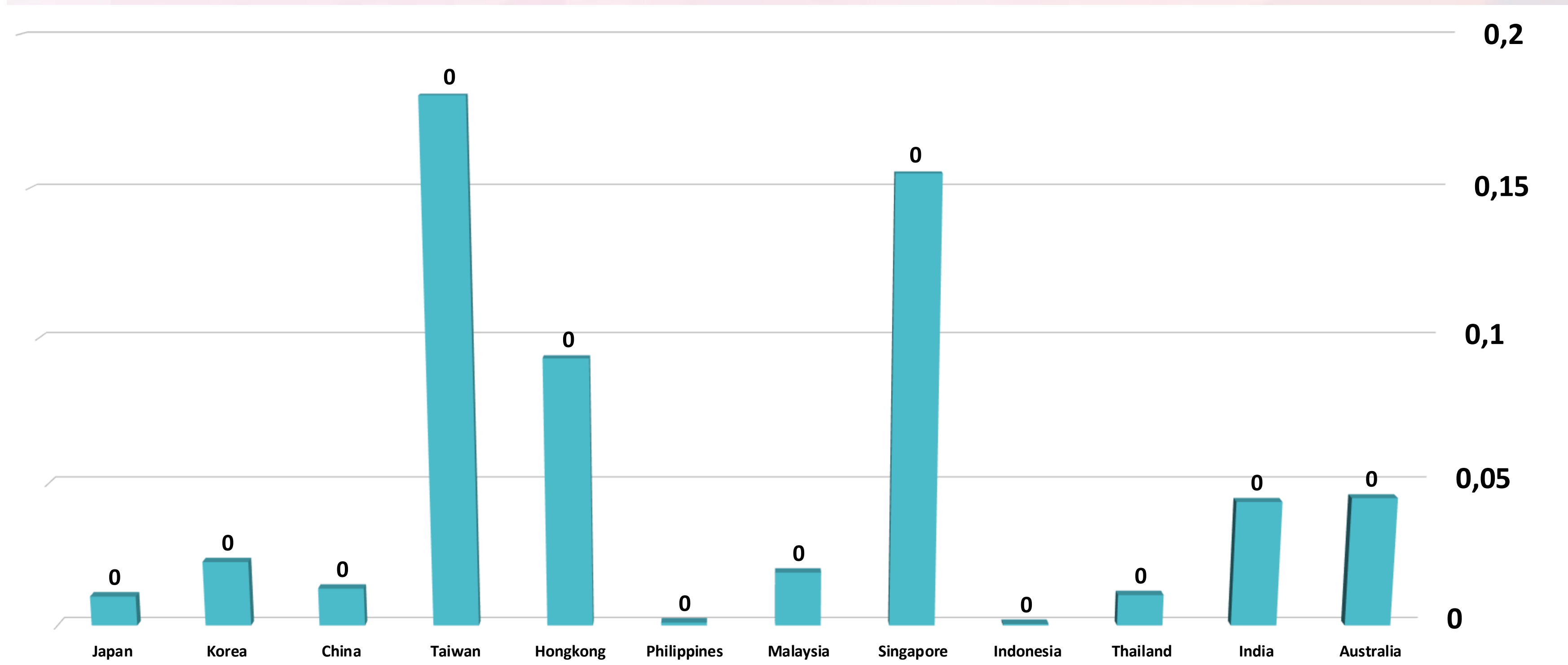
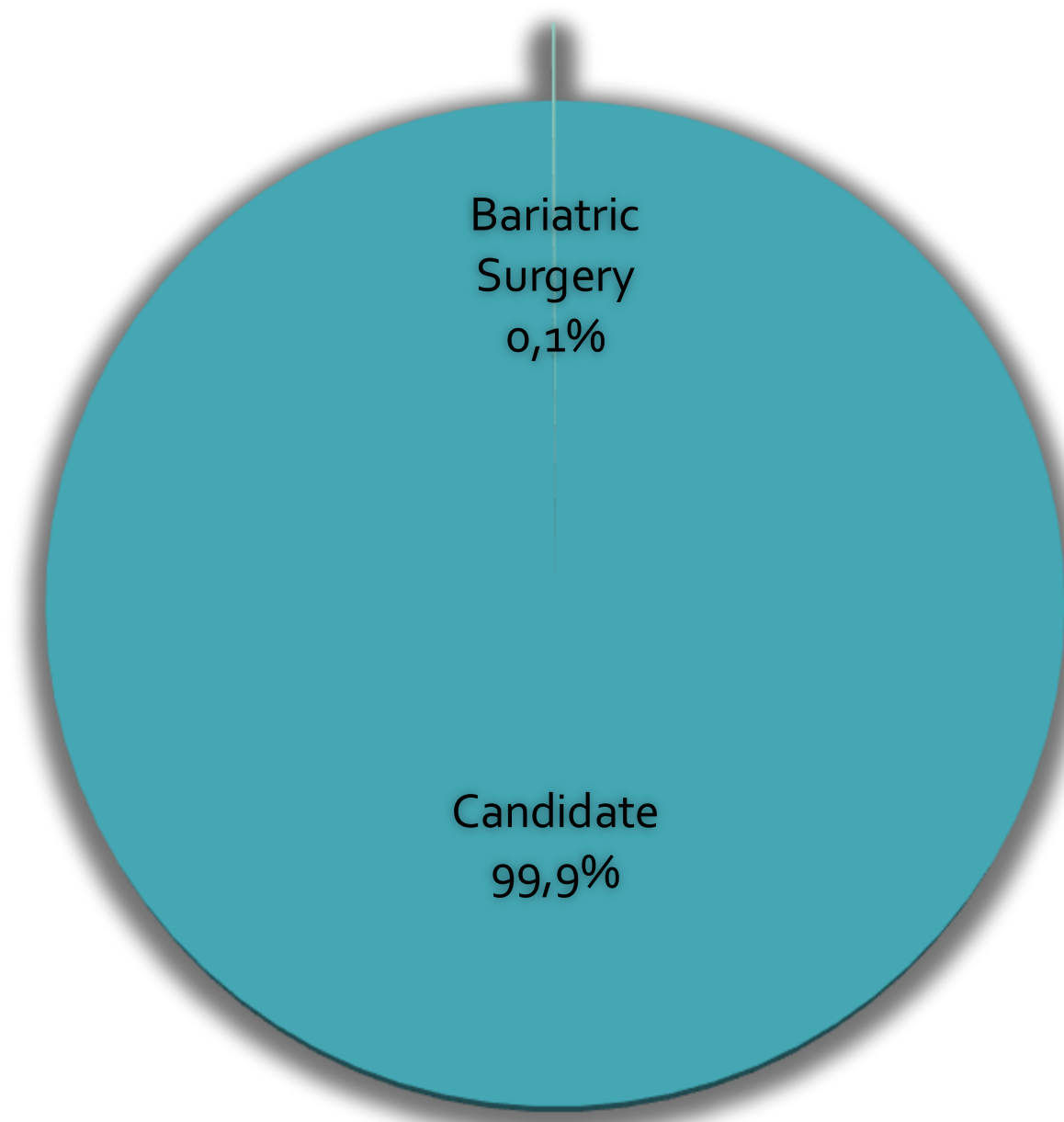
LSG



Bypasses in Asia Pacific Region



Unmet need for bariatric surgery in Asia Pacific



% Bariatric Surgery in obese population

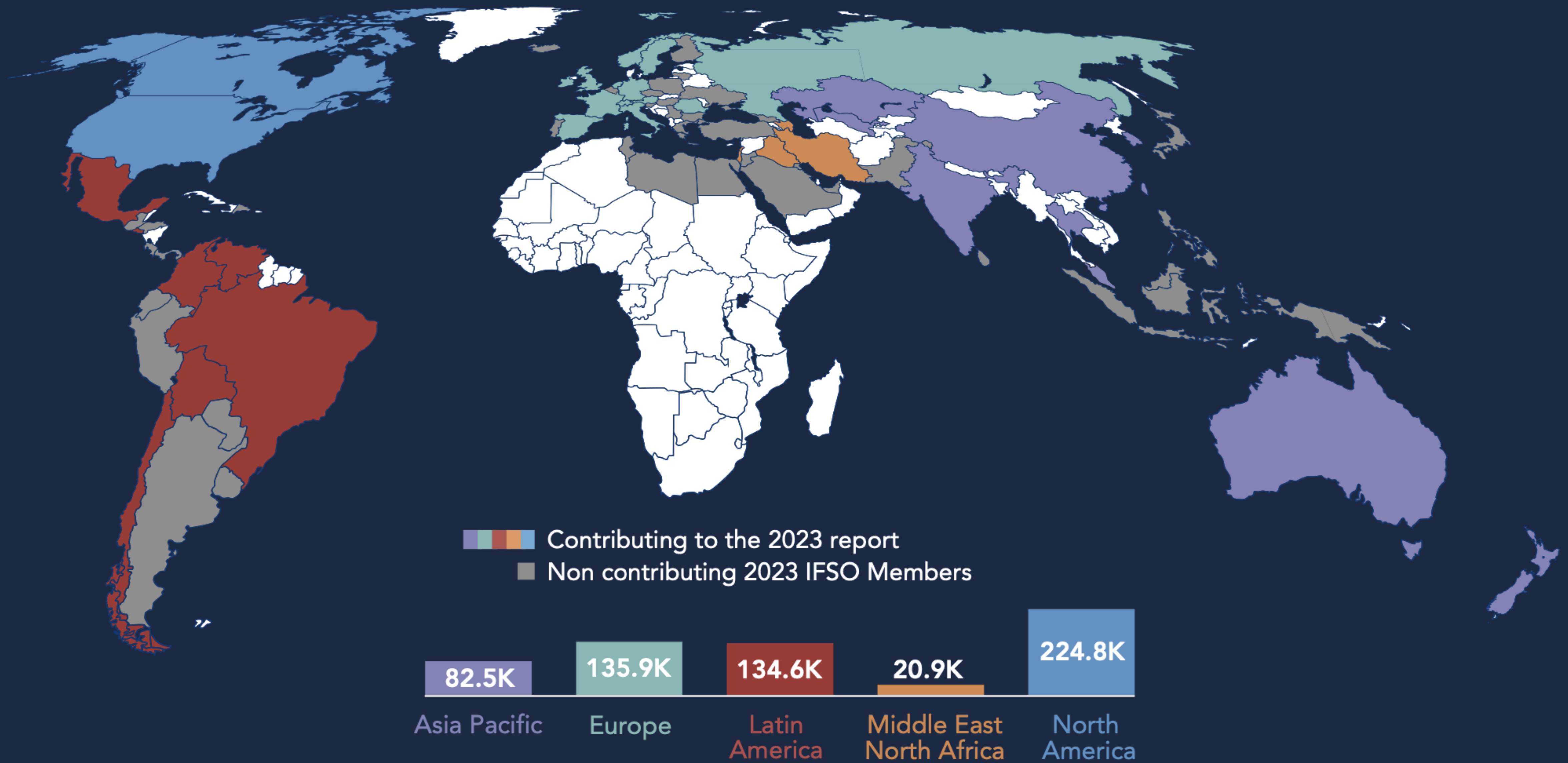


FIGURE 1. Geographic distribution of contributors to the 9th IFSO global registry report and total procedure count by IFSO chapter (2023)

Figure 4. Total primary procedures by operative type, n=547,959 (2023)

● Sleeve Gastrectomy ● RYGB ● OAGB ● Band ● Other



Key Outcomes in this Report

Revision 8.5%

Most Common Revision Procedure is RYGB

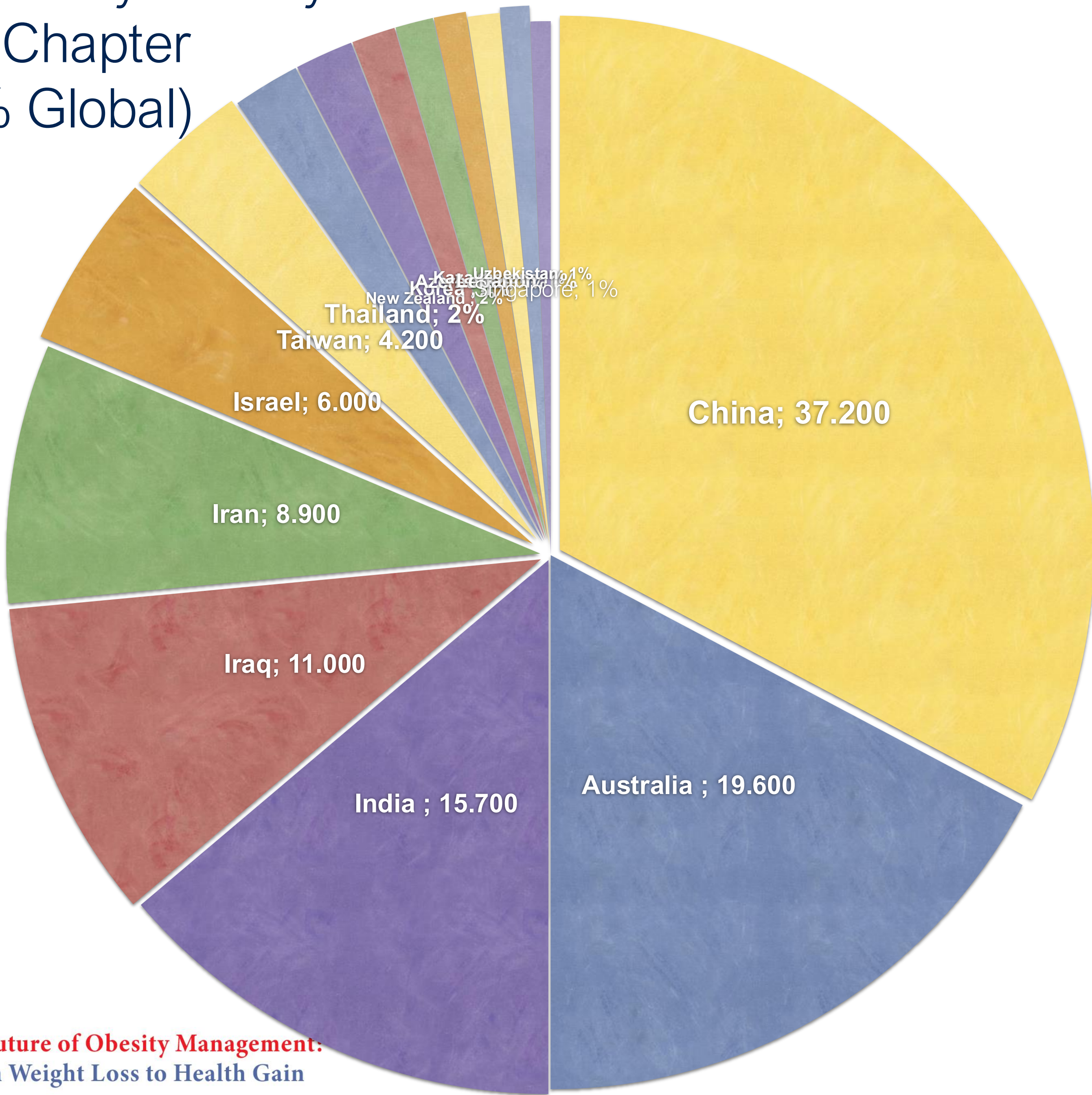
Registry Coverage and Participation

- Total number of procedures captured in 2023: 593,500
 - 543,000 primary procedures
 - 50,500 revisional/secondary procedures
- Number of participating countries/registries: 37 countries and 2 regional registries (Michigan, USA and Ontario, representing Canada)
- Percentage of known national registries represented: $39/44 = 89\%$

Types and Techniques of Procedures

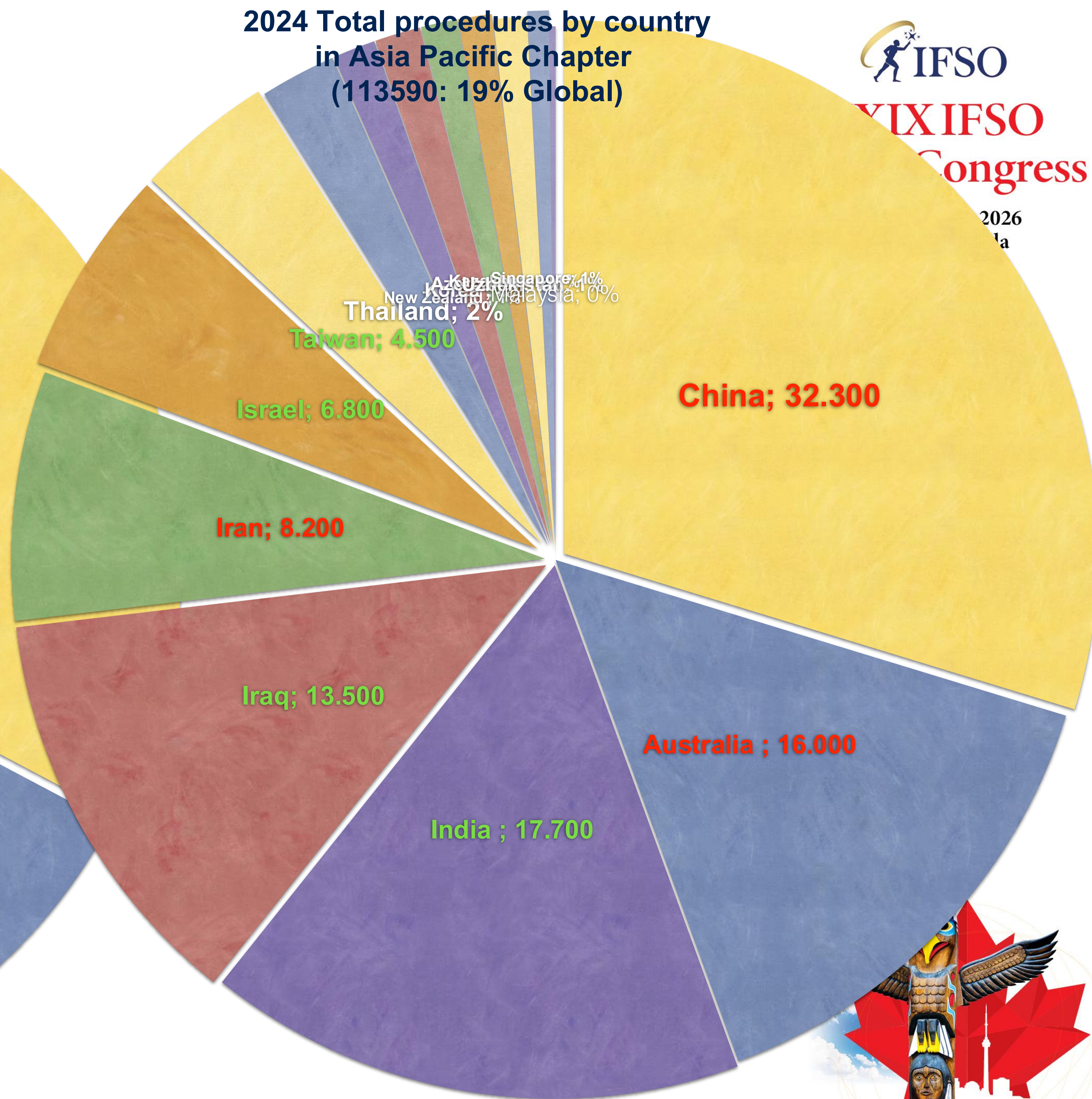
- Most common primary procedure: Sleeve gastrectomy (61%), with regional variation
- Most common revisional procedure: Roux-en-Y gastric bypass (58%)
- Surgical approach:
 - Laparoscopic surgery was the predominant approach
 - Use of robotic surgery is increasing, particularly for revisional procedures

2023 Total procedures by country
in Asia Pacific Chapter
(113590: 19% Global)

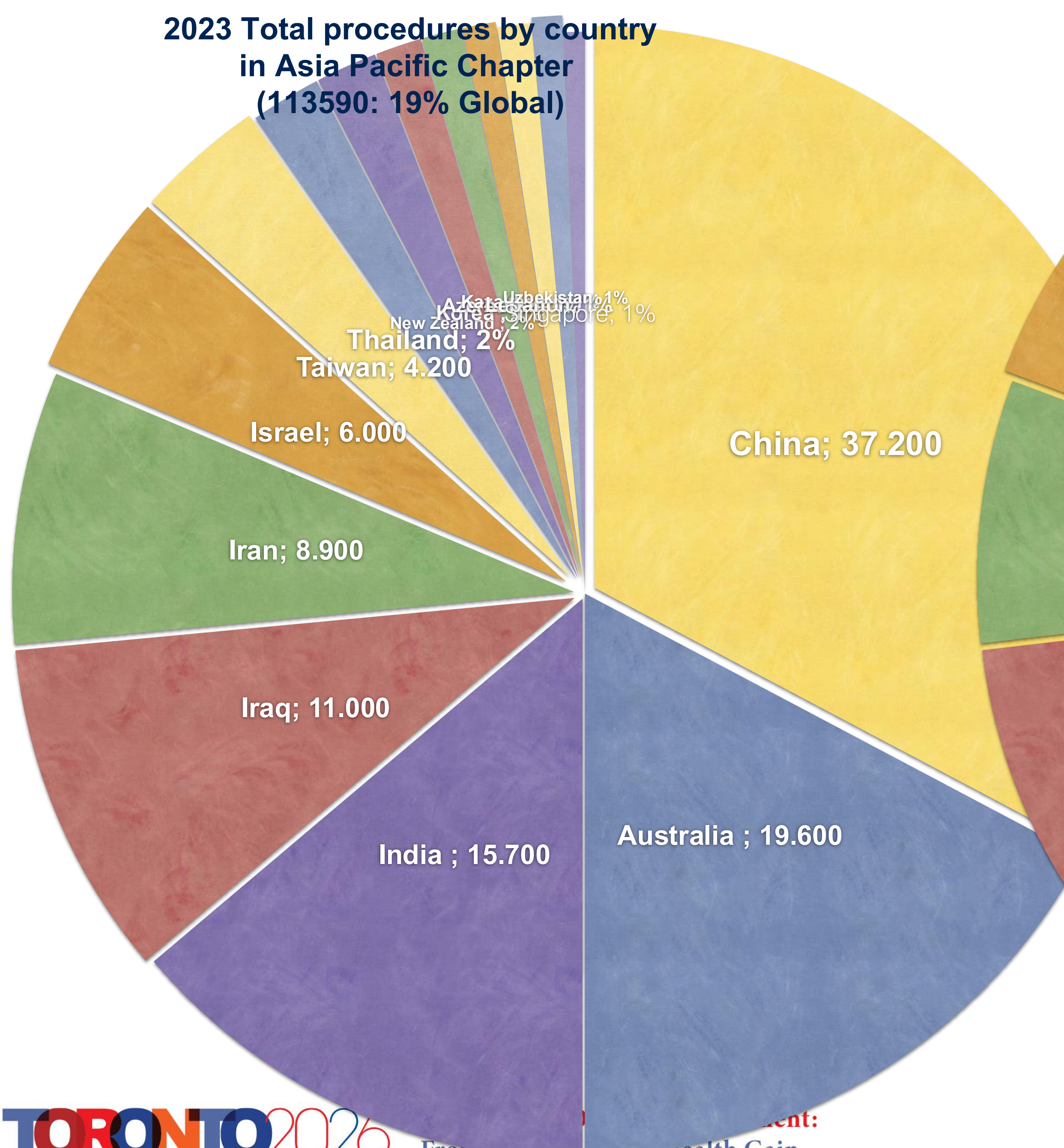




**2024 Total procedures by country
 in Asia Pacific Chapter
 (113590: 19% Global)**

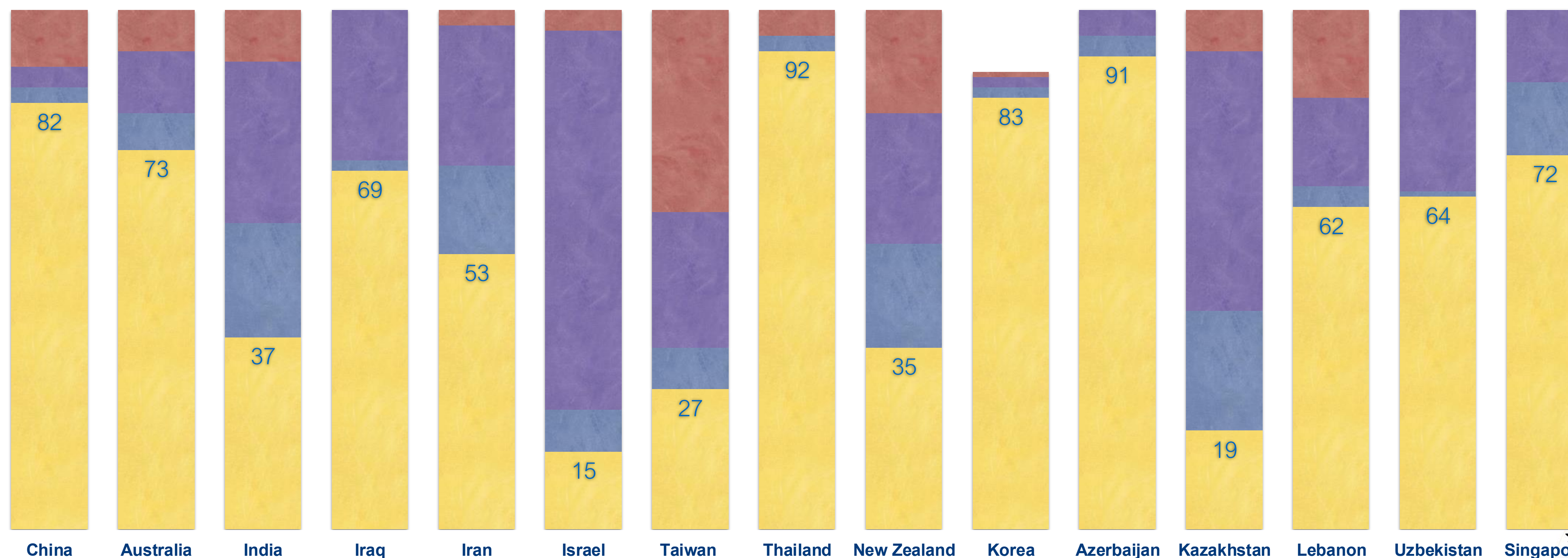


**2023 Total procedures by country
 in Asia Pacific Chapter
 (113590: 19% Global)**

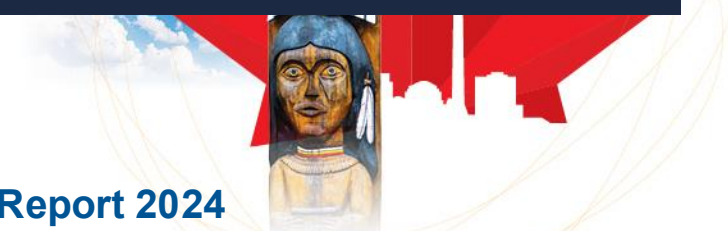
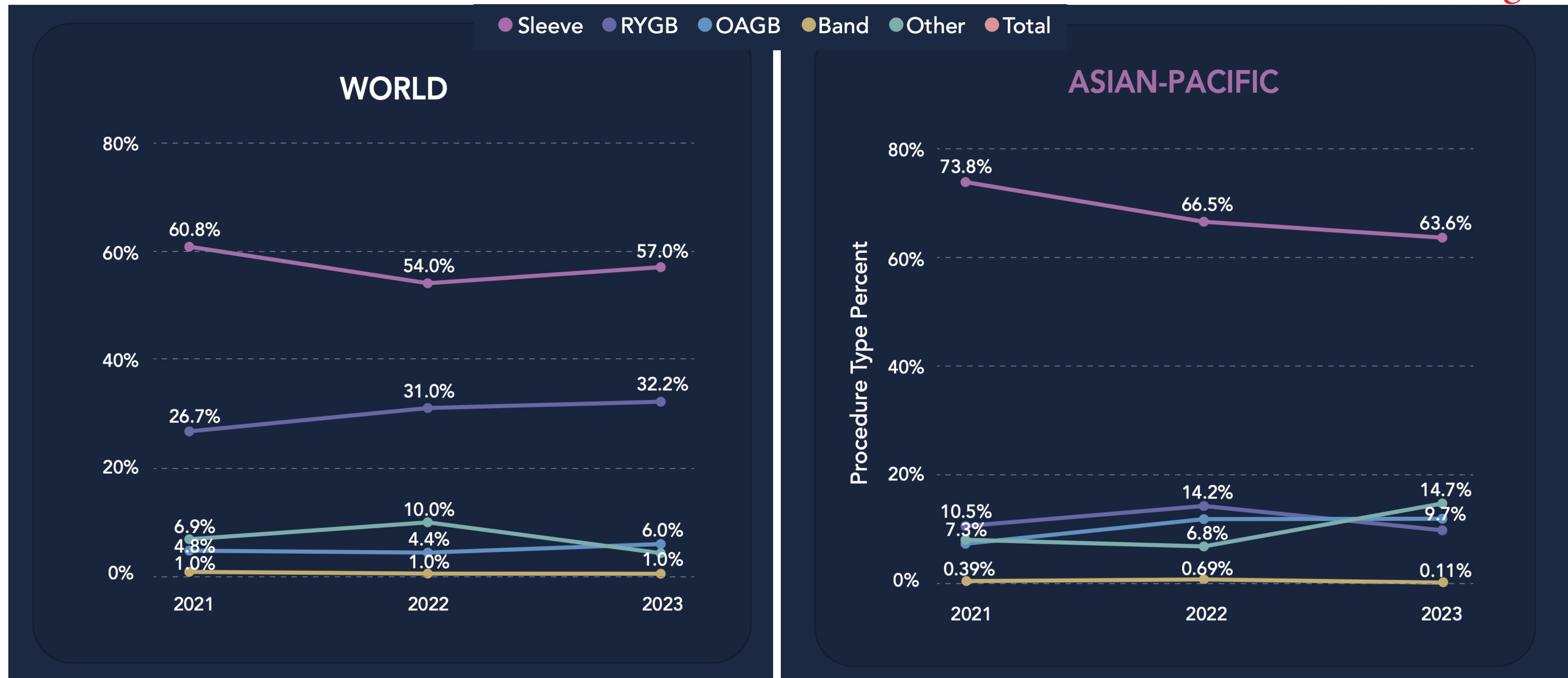


Primary Surgery by Country in Asia Pacific Chapter

■ LSG ■ RYGB ■ OAGB ■ Other



Procedure type breakdown by IFSO chapter and year



Percent of Revision Surgery by Country in Asia

■ Revision

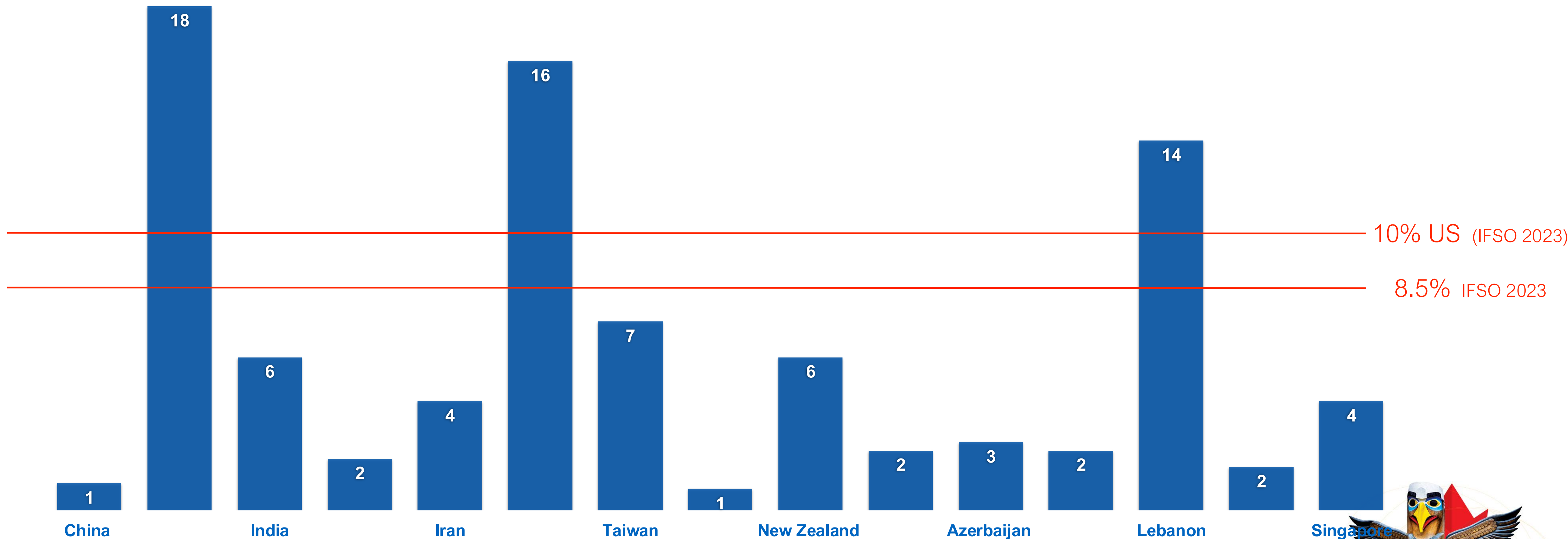
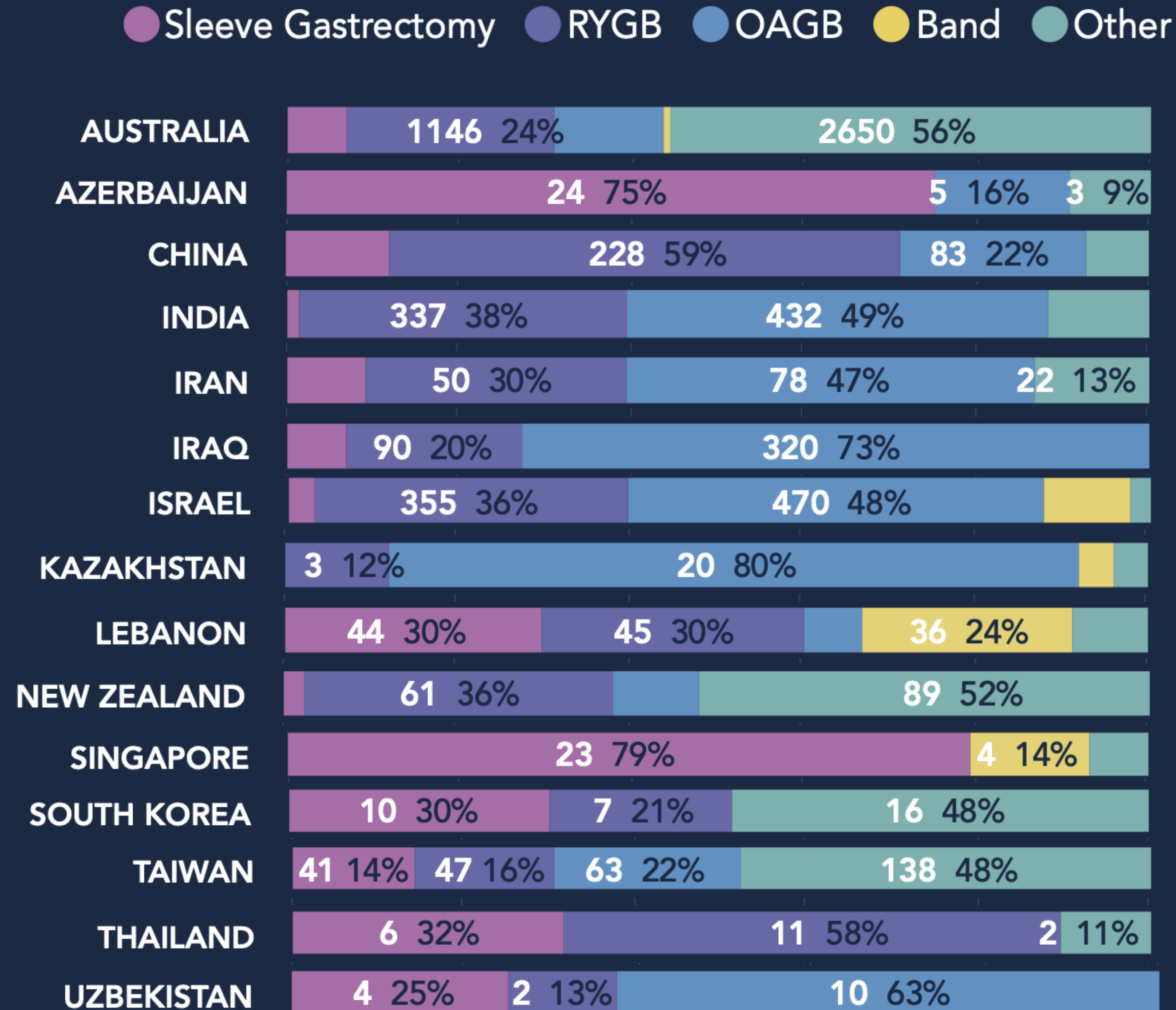
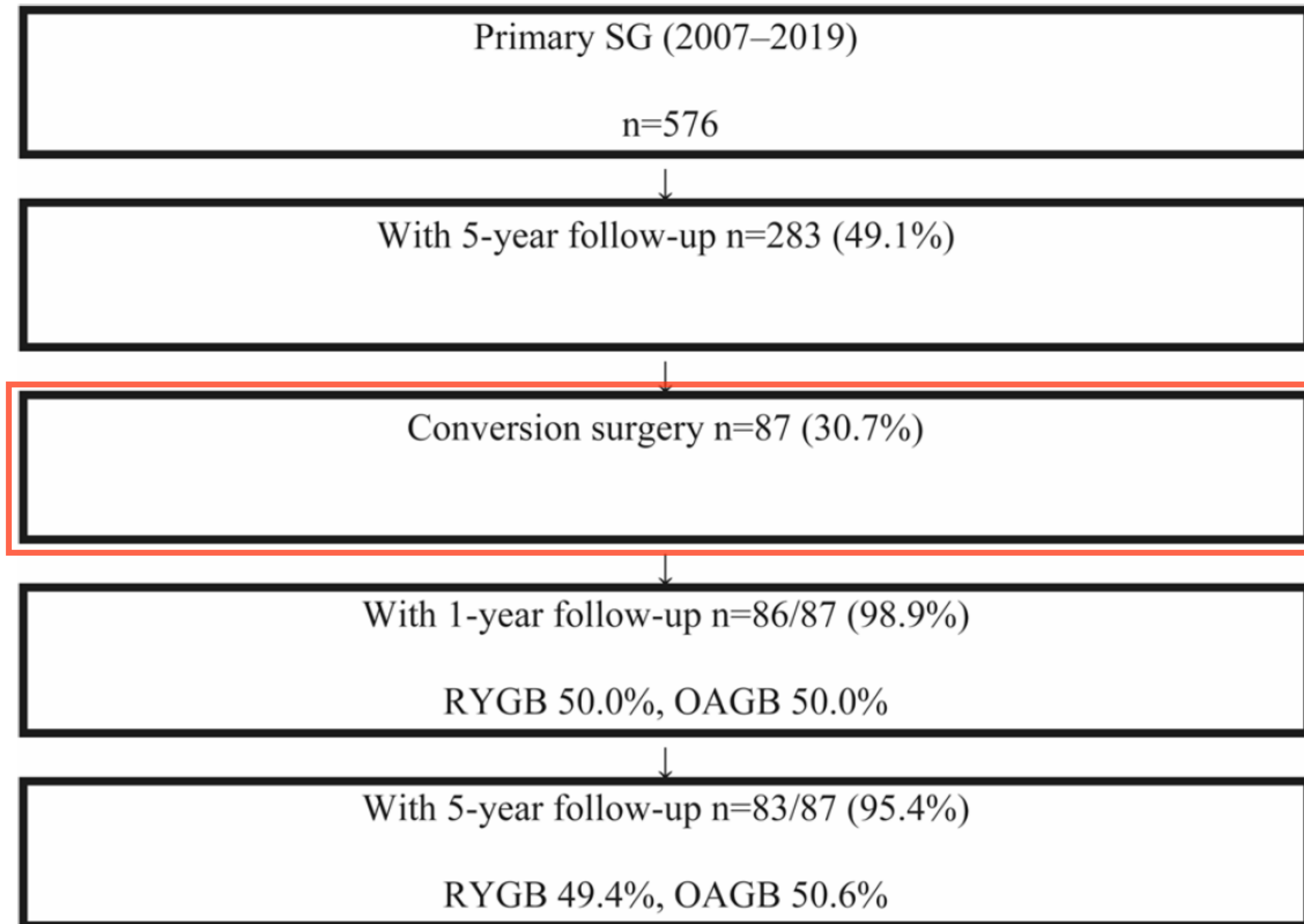


Figure 8. Revisional procedure count and operative type breakdown by country (2023)



Long-Term Outcomes up to 10 Years After Indication-Based Conversion to One-Anastomosis Gastric Bypass or Roux-En-Y Gastric Bypass after Sleeve gastrectomy



Long-Term Outcomes up to 10 Years After Indication-Based Conversion to One-Anastomosis Gastric Bypass or Roux-En-Y Gastric Bypass after Sleeve gastrectomy

Table 2 Outcomes at 1 and 5 years after primary sleeve gastrectomy

Outcome	Follow-up	n/N (%)
Weight recurrence	1 year	83/423 (19.6%)
	5 years	189/283 (66.8%)
GERD without esophagitis	1 year	56/423 (13.2%)
	5 years	75/283 (26.5%)
GERD with esophagitis	1 year	26/423 (6.1%)
	5 years	77/283 (27.2%)

GERD gastroesophageal reflux disease. The 1-year denominator is 423 patients with available 1-year follow-up, and the 5-year denominator is 283 patients with available 5-year follow-up



Long-Term Outcomes up to 10 Years After Indication-Based Conversion to One-Anastomosis Gastric Bypass or Roux-En-Y Gastric Bypass after Sleeve gastrectomy

Table 1 De novo esophagitis severity and Barrett's esophagus at 1 and 5 years after primary sleeve gastrectomy

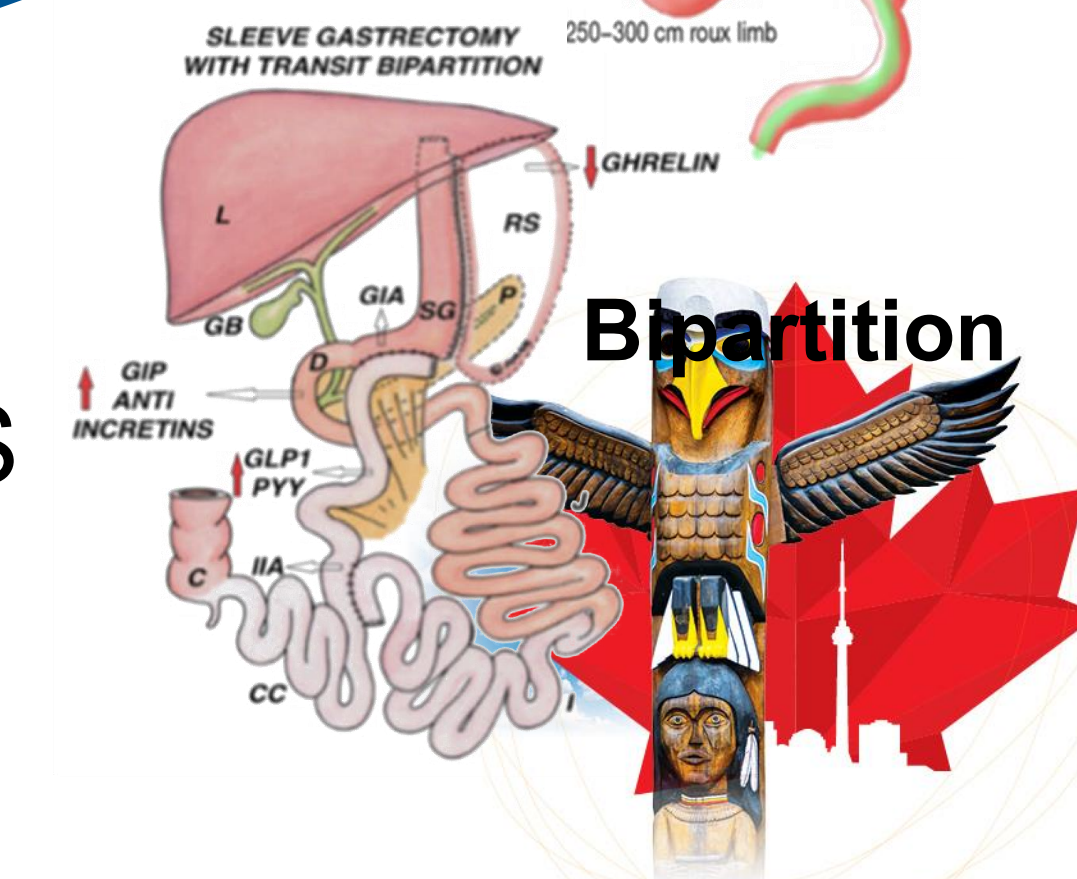
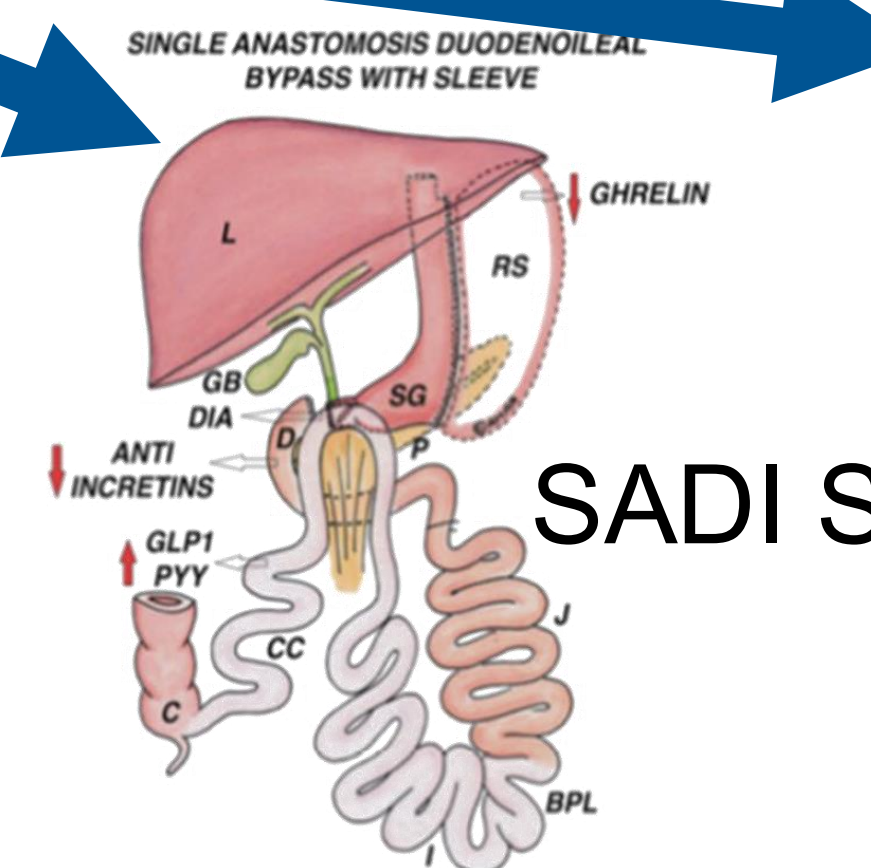
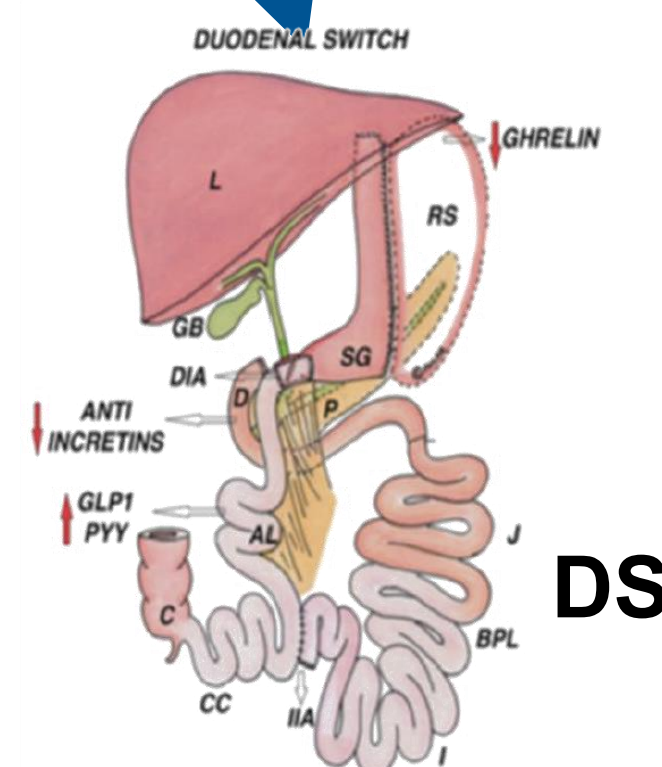
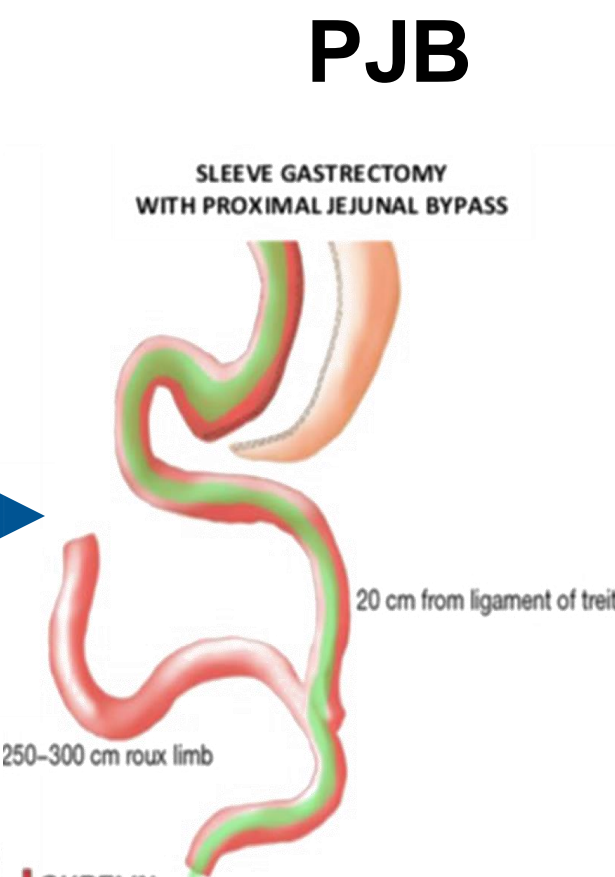
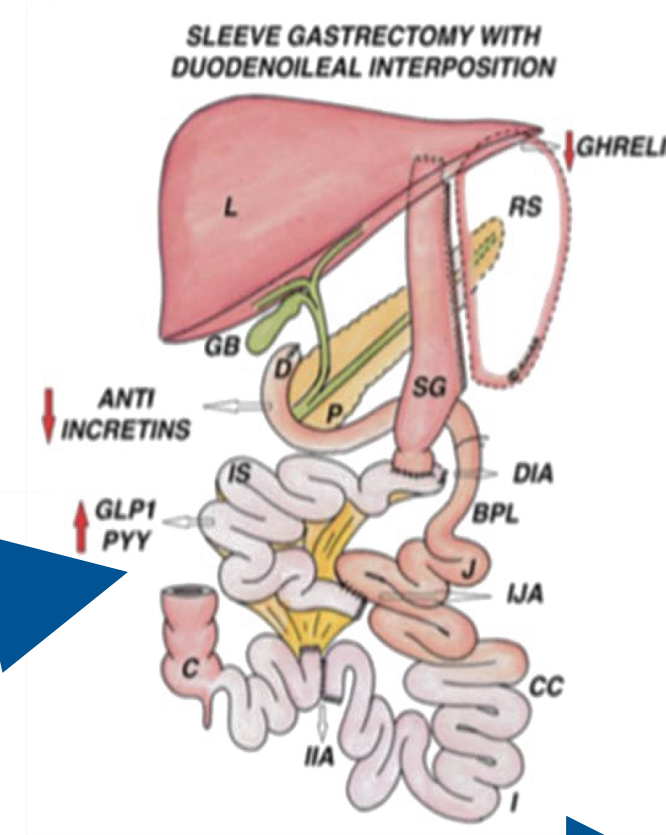
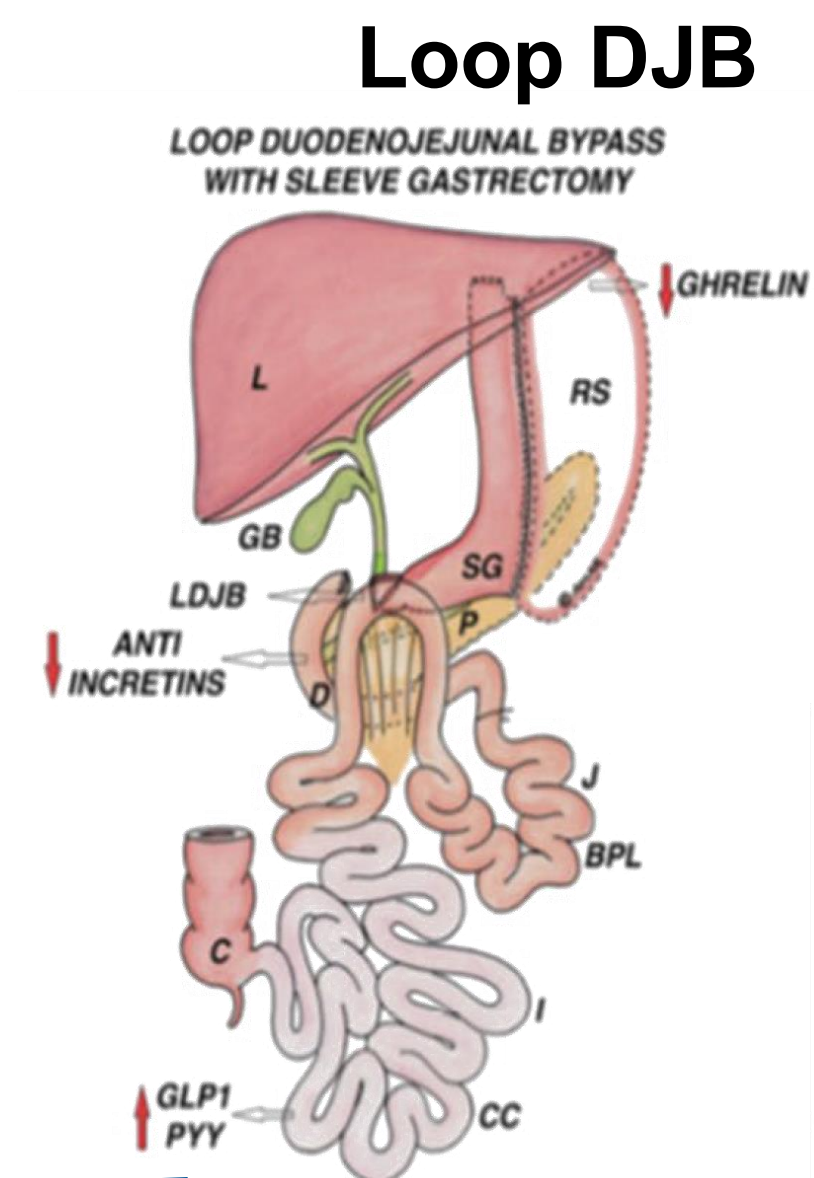
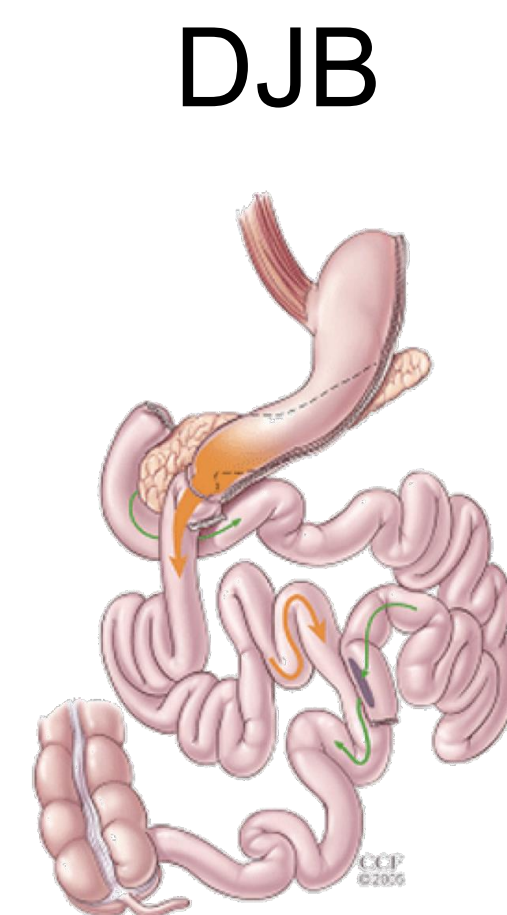
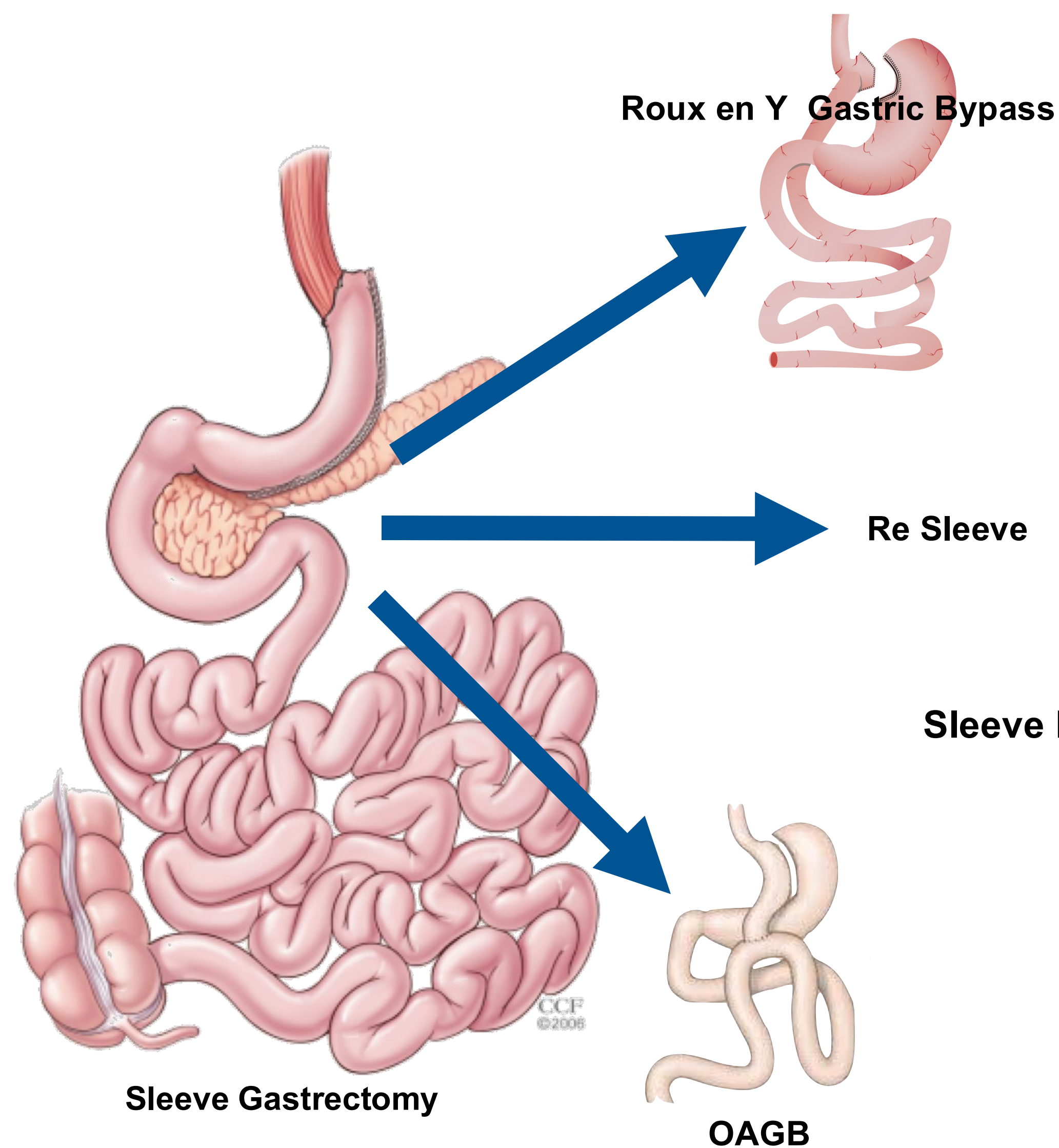
LA grade	Brief severity description	1 year <i>N</i> =423	5 years <i>N</i> =283
A	Mucosal break(s) ≤ 5 mm	13/423 (3.1%)	18/283 (6.4%)
B	Mucosal break(s) > 5 mm, not continuous between folds	9/423 (2.1%)	27/283 (9.5%)
C	Continuous between ≥ 2 folds, $< 75\%$ of circumference	4/423 (0.9%)	29/283 (10.2%)
D	$\geq 75\%$ of circumference	0/423 (0.0%)	2/283 (0.7%)
BE	Barrett's esophagus	0/423 (0.0%)	1/283 (0.4%)



Management for RWG After LSG



1-4 September 2026
Toronto, Canada
DI Interposition

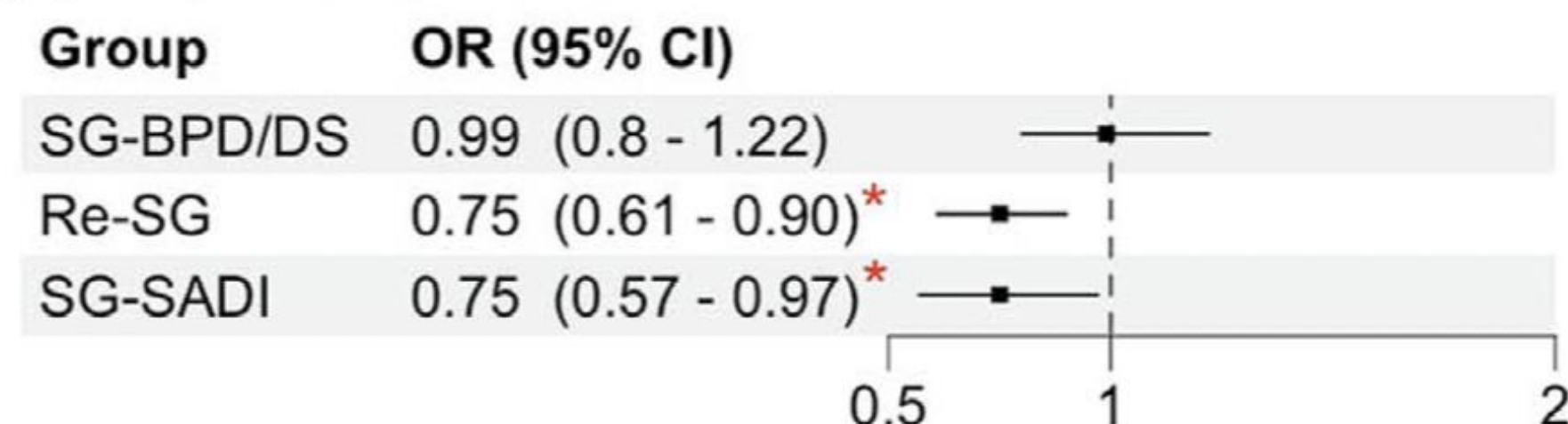


Postoperative outcomes following revision or conversion surgery after primary sleeve gastrectomy: an analysis of the MBSAQIP database

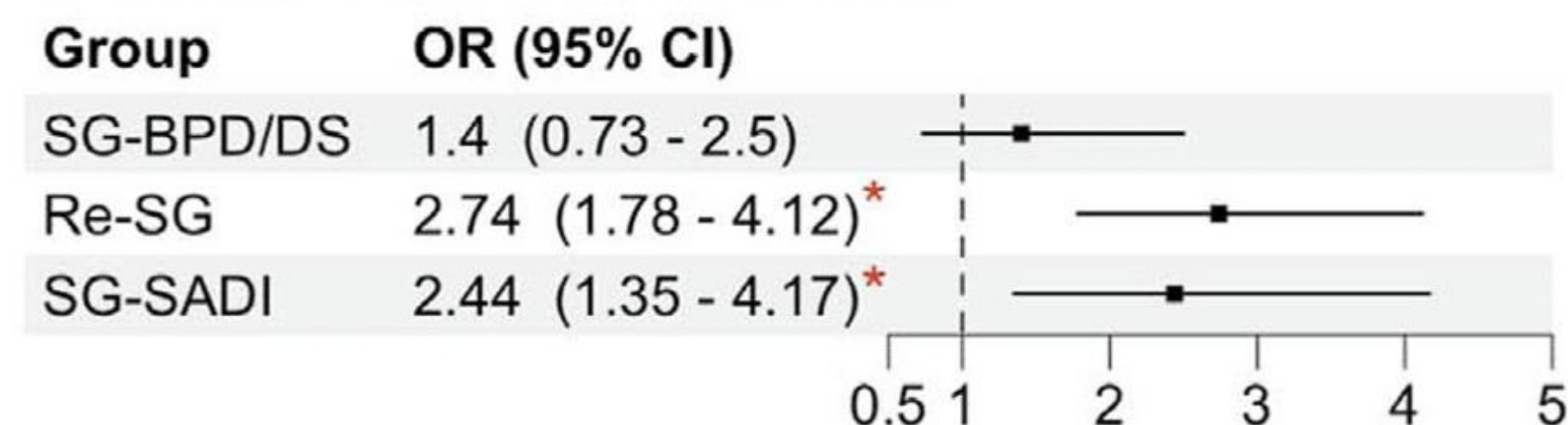
Baseline characteristics of patients by treatment group

	SG to RYGB	Re-SG	SG to BPD/DS	SG to SADI	SG to OAGB	Total	P value
N (% of total)	27393 (82.1%)	2406 (7.2%)	1891 (5.67%)	1348 (4.04%)	310 (.93%)	33,348	N/A
Age, mean (SD)	46.1 (10.6)	45.6 (10.6)	44.8 (10.2)	44.7 (10.2)	45.3 (10.4)	45.9 (10.5)	<.0001*
BMI, mean (SD)	39.7 (7.8)	40.5 (7.3)	46.8 (8.9)	45.3 (8.1)	40.9 (9.2)	40.4 (8.1)	<.0001*
Female, N (% of group)	24918 (91.0%)	2088 (86.8%)	1561 (82.6%)	1139 (84.6%)	278 (89.7%)	29984 (89.9%)	<.0001*
Smoking history	1280 (4.7%)	144 (6.0%)	81 (4.3%)	65 (4.8%)	13 (4.2%)	1583 (4.7%)	.0474*
Diabetes							<.0001*
Insulin	740 (2.7%)	62 (8.6%)	79 (4.2%)	60 (4.5%)	9 (2.9%)	950 (2.8%)	
No insulin	2368 (8.6%)	215 (8.9%)	230 (12.2%)	183 (13.6%)	30 (9.7%)	3026 (9.1%)	
OSA	6373 (23.3%)	502 (20.9%)	647 (34.2%)	435 (32.3%)	77 (24.8%)	8034 (24.1%)	<.0001*
GERD	20189 (73.7%)	967 (40.2%)	728 (38.5%)	520 (38.6%)	220 (71%)	22624 (67.8%)	<.0001*
Hypertension	9529 (34.8%)	775 (32.2%)	766 (40.5%)	523 (38.8%)	111 (35.8%)	11704 (35.1%)	<.0001*
COPD	317 (1.2%)	15 (.6%)	23 (1.2%)	9 (.7%)	7 (2.3%)	371 (1.1%)	.0171*
Hyperlipidemia	4825 (17.6%)	361 (15.0%)	342 (18.1%)	272 (20.2%)	54 (17.4%)	5854 (17.6%)	.0014*
History of DVT	637 (2.3%)	33 (1.4%)	46 (2.4%)	45 (3.3%)	10 (3.2%)	771 (2.3%)	.0019*
History of PE	521 (1.9%)	33 (1.4%)	38 (2.0%)	32 (2.4%)	2 (.6%)	626 (1.9%)	.0927
History of MI	291 (1.1%)	19 (.8%)	13 (.7%)	11 (.8%)	1 (.3%)	335 (1.0%)	.2083
Renal insufficiency	94 (.3%)	12 (.5%)	6 (.3%)	8 (.6%)	2 (.6%)	122 (.4%)	.3726
Dialysis	44 (.2%)	3 (.1%)	2 (.1%)	7 (.5%)	0 (0%)	56 (.2%)	.0240*
Indication for conversion							<.0001*
GERD	15580 (56.9%)	369 (15.3%)	104 (5.5%)	85 (6.3%)	159 (51.3%)	16297 (48.9%)	
WR/IWL	9799 (35.7%)	1820 (75.6%)	1654 (87.5%)	1176 (87.2%)	131 (42.3%)	14580 (43.7%)	
Obstructive symptoms	1180 (4.3%)	74 (3.1%)	10 (.5%)	5 (.4%)	14 (4.5%)	1283 (3.8%)	
GI tract disease	90 (.3%)	8 (.3%)	0	0	1 (.3%)	99 (.3%)	
Other causes	744 (2.7%)	135 (5.6%)	123 (6.5%)	82 (6.1%)	5 (1.6%)	1089 (3.3%)	

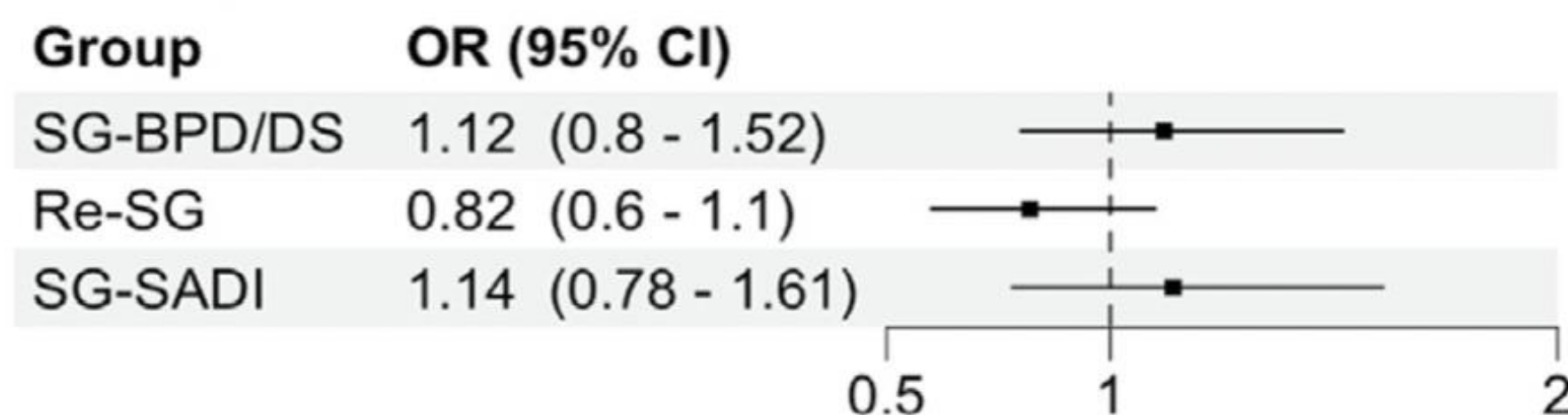
A Major complications



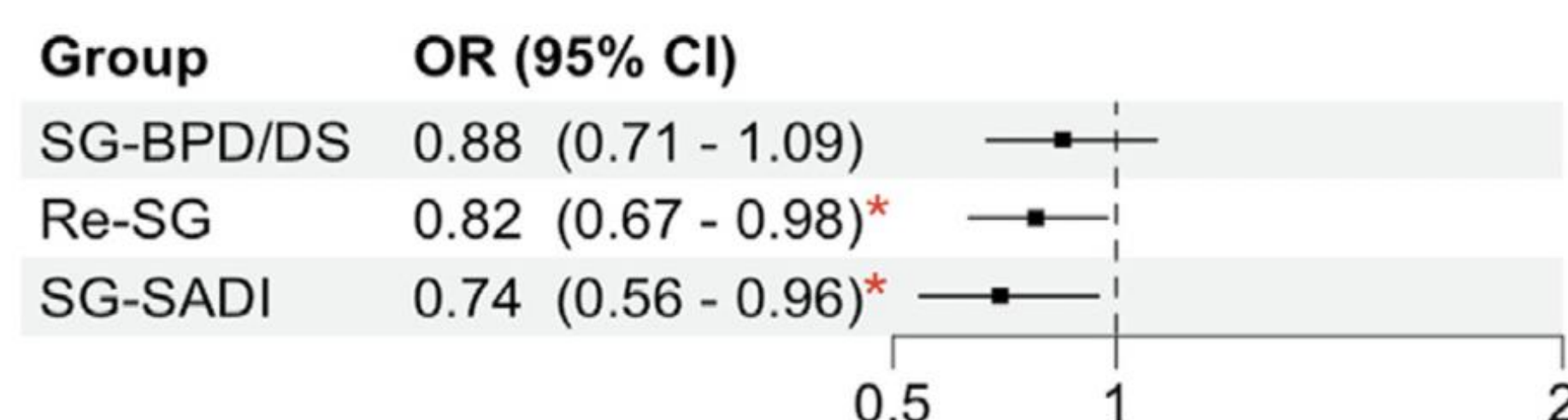
B Anastomotic or staple line leak



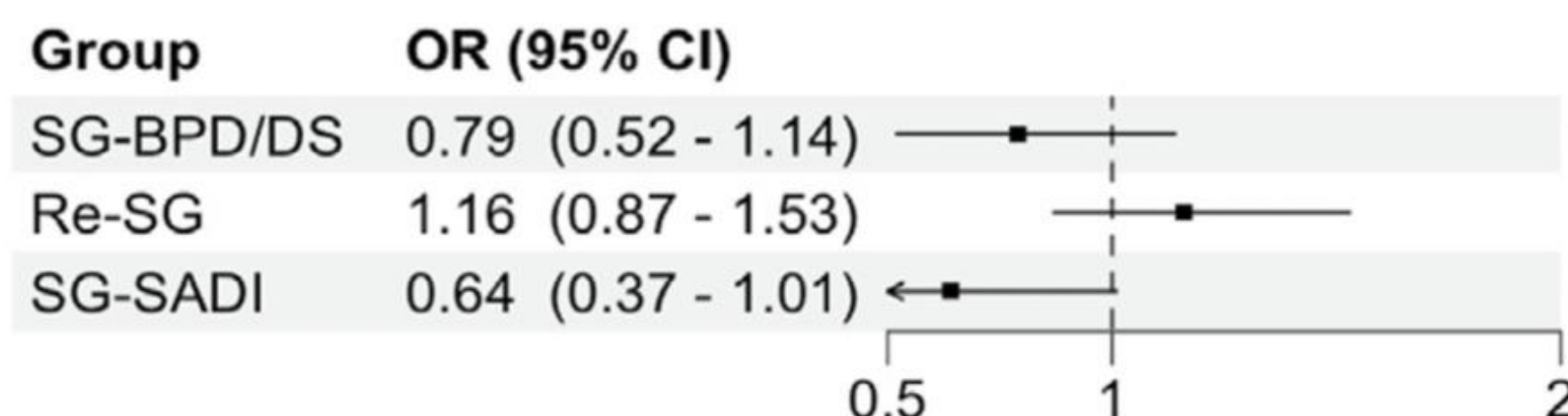
C Reoperation



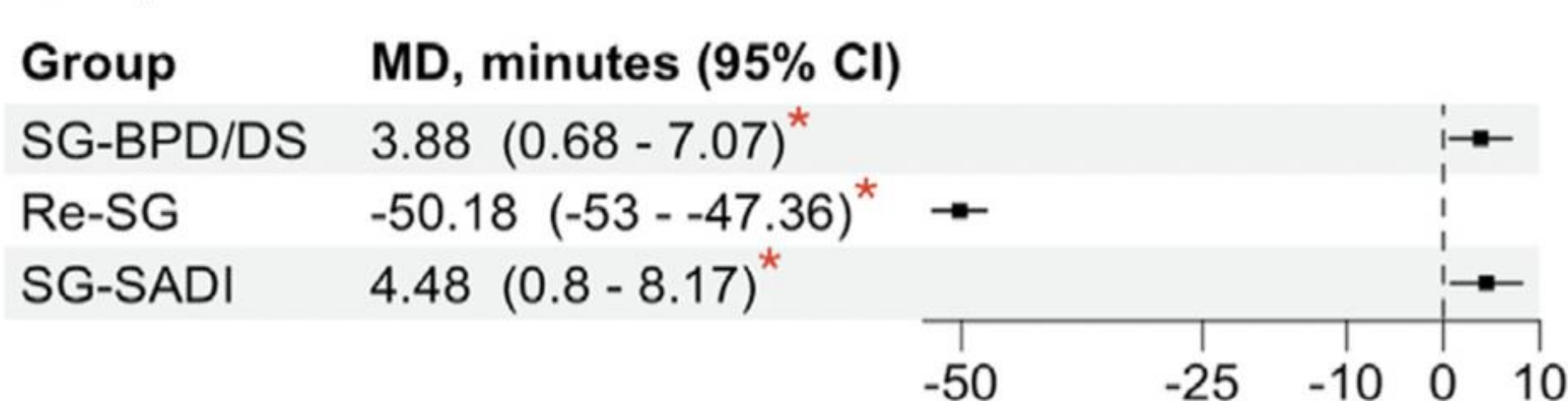
D Readmission



E Re-intervention



F Operative time



Sleeve to gastric bypass conversion: a multiinstitutional study of 217 patients

Demographics parameters of the patients at the initial sleeve gastrectomy

Demographics	GERD (n = 124)	Weight (n = 93)	P value
Age, years (mean ± SD)	46 ± 10	45 ± 10	.524
Weight, kg (mean ± SD)	122 ± 22	130 ± 26	.195
BMI, kg/m ² (mean ± SD)	37.8 ± 6.4	44.8 ± 8.0	.052
Female, n (%)	112 (90)	80 (86)	.326
ASA, n (%)			.336
I	4 (3)	0 (0)	
II	41 (33)	28 (30)	
III	76 (61)	61 (65)	
IV	2 (2)	2 (2)	
Smoking, yes, n (%)	4 (3)	5 (5)	.432
T2DM, yes, n (%)	10 (8)	16 (17)	.040
OSA, yes, n (%)	23 (18)	29 (31)	.024
GERD, yes, n (%)	24 (19)	17 (18)	.709
Dyslipidemia, yes, n (%)	21 (17)	12 (13)	.540

Weight loss outcomes at the initial sleeve gastrectomy and at the subsequent conversion to a gastric bypass

Weight outcomes	GERD (n = 87/124)	Weight (n = 70/93)	P value
Weight at initial surgery, kg (mean ± SD)	122 ± 22	130 ± 26	.195
Weight nadir after initial surgery, kg (mean ± SD)	81 ± 16	99 ± 20	.326
Total weight loss after primary, %, (mean ± SD)	35 ± 11	28 ± 9	.310
Weight at revision, kg (mean ± SD)	94 ± 15	115 ± 20	.085
Total weight loss after revision, %, (mean ± SD)	13 ± 8	16 ± 7	.529

SD = standard deviation; GERD = gastroesophageal reflux disease.

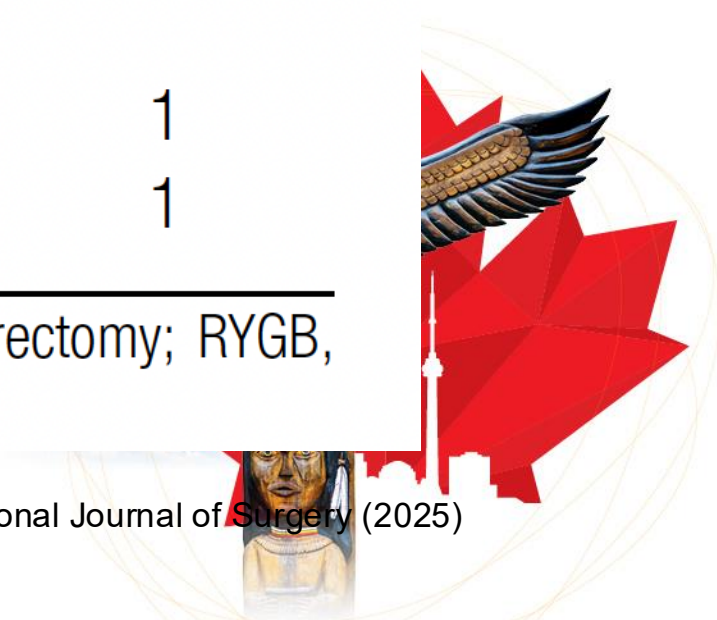
Reviving weight loss and metabolic obesity-related comorbidities: mid-term results of single anastomosis sleeve ileal (SASI) bypass for failed sleeve gastrectomy. A retrospective cohort study

Table 1	
Demographic and clinical characteristics of patients undergoing conversion from SG to SASI (n = 44)	
Variable	Value
Age (mean ± SD), years	42.6 ± 13
Gender (M/F)	6/38 (13.6%)
History of gastric banding, n (%)	8 (18.2%)
BMI at SG (mean ± SD), kg/m ²	47.9 ± 10.2
BMI at SASI (mean ± SD), kg/m ²	39.1 ± 7.2
Indication for SASI, n (%)	
- Insufficient weight loss (IWL)	20 (45.4%)
- Weight regain (WR)	24 (55.6%)
Weight loss with comorbidities, n (%)	
- OSAS	7 (15.9%)
- T2D	3(6.8%)
- HT	6 (13.6%)
- Metabolic syndrome	5 (11.3%)

HT, hypertension; IWL, insufficient weight loss; Met Syn, metabolic syndrome; OSAS, obstructive sleep apnea syndrome; T2D, type 2 diabetes; WR, weight regain.

Table 2	
Results of conversion from SG to SASI	
Variable	Value
Duration of surgery (mean ± SD), min	66 ± 15.5
Associated procedures, n	35
- Re-SG	22
- SG tube oversewing	2
- Hiatal hernia (HH) repair	9
- Cholecystectomy	2
Immediate postoperative complications, n (%)	
- Bleeding from gastroenterostomy	4 (9.1%)
- Anastomotic leak	1 (2.2%)
Long-term complications, n (%)	
- De novo GERD	5 (11.4%)
- Occasional diarrhea	5(11.4%)
- Hypoalbuminemia	2 (4.5%)
- Low iron level	2 (4.5%)
- Severe malnutrition	1 (2.2%)
Surgeries for SASI-related complications, n	
- Conversion to RYGB for GERD	1
- Conversion to SG for excessive weight loss	1

GERD, gastroesophageal reflux disease; HH, hiatal hernia; Re-SG, re-sleeve gastrectomy; RYGB, Roux-en-Y gastric bypass; SG, sleeve gastrectomy; WL, weight loss.



Reviving weight loss and metabolic obesity-related comorbidities: mid-term results of single anastomosis sleeve ileal (SASI) bypass for failed sleeve gastrectomy. A retrospective cohort study

Table 3

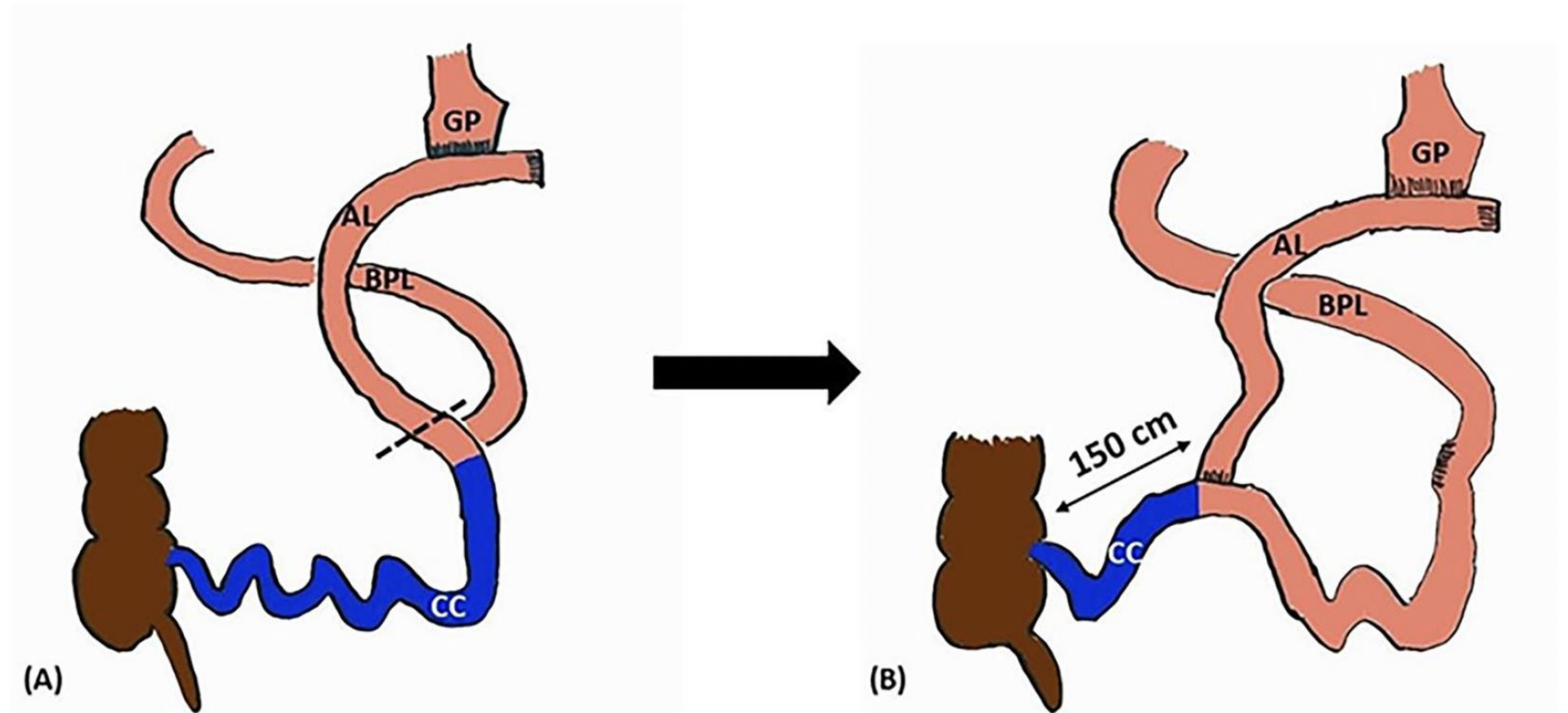
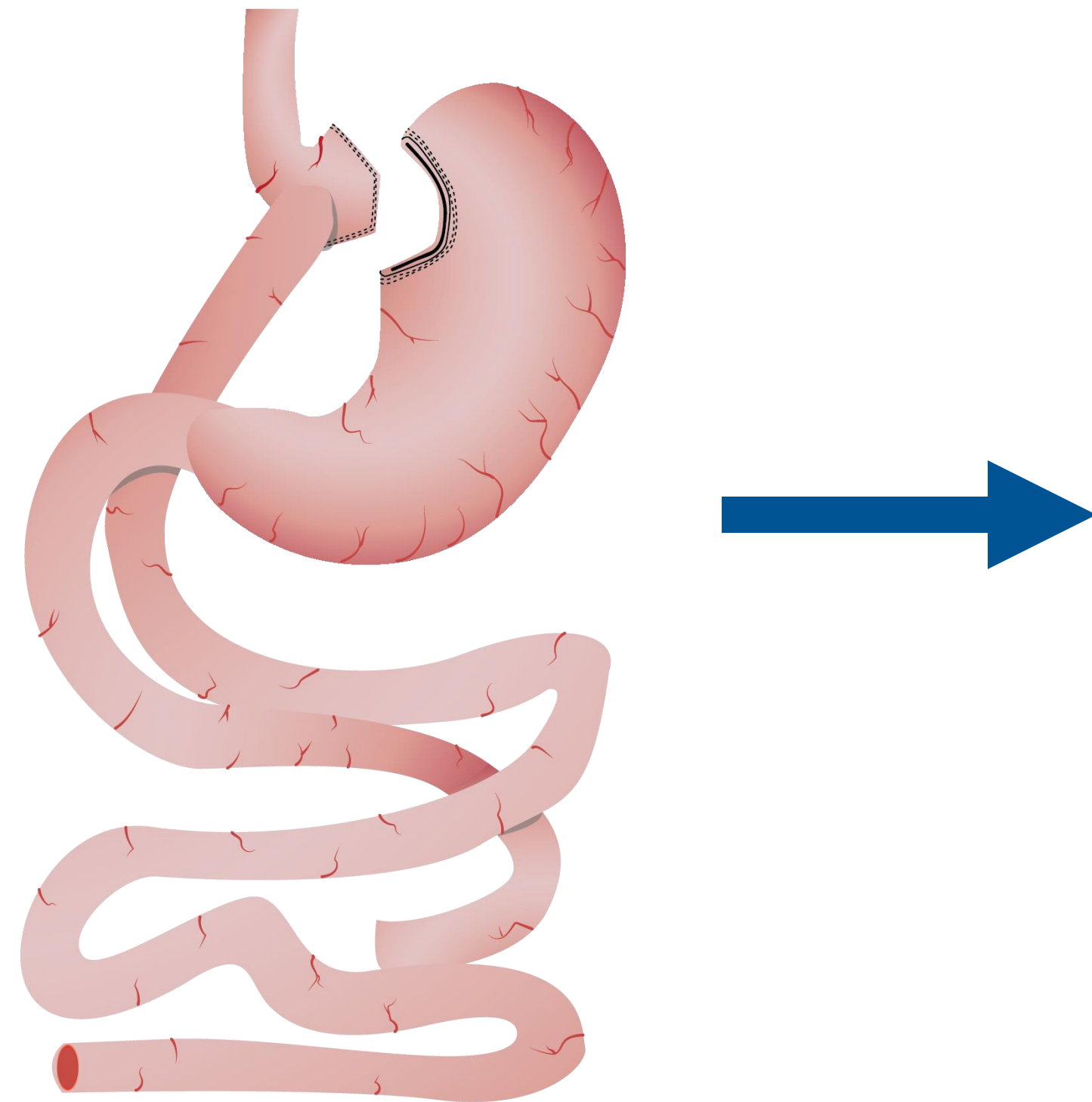
weight loss results after SASI

	N eligible pts	N present pts	% of FU	BMI	%TWL
6 po months	44	44	100%	33.5 ± 6.5	14.1 ± 6.9
12 po months	42	41	97.6%	30.5 ± 5.9	21.5 ± 7.7
18 po months	39	33	84.6%	29.1 ± 5.9	25.9 ± 8.9
24 po months	32	28	87.5%	27.5 ± 4.8	29.7 ± 9.5

BMI: body mass index; FU: follow-up; po: postoperative; pts: patients; %TWL: percentage total weight loss.



Laparoscopic Gastric Bypass



Distalization



Gastrojejunostomy revision combined with biliopancreatic limb lengthening provides superior weight loss and metabolic outcomes compared to gastrojejunostomy revision alone in Roux-en-Y gastric bypass patients with weight recurrence

Factor	GJ anastomotic ($n = 23$)	GJ revision & BP limb length ($n = 28$)	p -value
Sex- female	21 (91%)	27 (96%)	0.58
Weight at revision (lbs)	271 (218, 306.5)	259.5 (230.2, 291)	0.90
Weight at revision (kg)	122.9 (98.9, 139.0)	117.7 (104.4, 132.0)	0.90
Height (inches)	67 (63, 68)	64 (63, 66.5)	0.044
Height (m)	1.70 (1.60, 1.73)	1.63 (1.60, 1.69)	0.044
BMI (kg/m^2)	41.4 (35.3, 45.2)	45.1 (38.7, 48.3)	0.16
History of diabetes	4 (24%)	7 (26%)	1.00
Pre-revision A1c (%)	5.5 (5.1, 6.5)	5.6 (5.3, 6.1)	0.84
Most recent A1c	5.4 (5.1, 5.9)	5.0 (4.75, 5.25)	0.035
Months from revision to last follow-up	47 (14, 71)	14 (4, 30)	0.013



Gastrojejunostomy revision combined with biliopancreatic limb lengthening provides superior weight loss and metabolic outcomes compared to gastrojejunostomy revision alone in Roux-en-Y gastric bypass patients with weight recurrence

Factor	GJ anastomotic (<i>n</i> = 23)	GJ revision & BP limb length (<i>n</i> = 28)	<i>p</i> -value
%TBWL	11.9 (9.4, 16.5)	20.6 (14.1, 34.3)	0.001
Lowest weight after revision (lbs.)	227 (189, 261)	190 (165, 240)	0.066
Weight loss after revision (lbs.)	32 (19, 46)	44.95 (34, 56)	0.073
Lowest BMI after revision	35.7 (30.5, 41.8)	33.4 (28.6, 39.7)	0.29
Drop in BMI after revision	5.49 (2.72, 7.62)	7.39 (6.11, 9.61)	0.039



Gastric pouch > 6 cm

5 cm or less

GJ stomas > 2 cm

1.5 cm (plication or a takedown and re-anastomosis)



Metabolic Bariatric Surgery in Asia Pacific : IFSO APC Session
At the Crossroad



Is Revision Surgery an Emerging Burden in ASIA

- 1. Number of Primary surgery will be slowly increasing (Public Awareness, MDT, Reimbursement)**
- 2. Revision surgery will be greatly challenged in both number and procedures**
- 3. Revision of sleeve gastrectomy : Several options**
 - Best Ds , SADI**
 - Still working : RYGB**
 - Re Sleeve : May be not**
 - Add Plusses: Required evidences**
- 4. Revision of Gastric Bypass : Limited options**
 - Distalization**
- 5. Integration with OMMs and Revision surgery is primarily optimized**



XXX IFSO WORLD CONGRESS

“Advancing Multimodal Obesity Care”

24–27 August 2027

ifso2027.org



IFSO
PARIS 2027

See you in
PARIS

