Il "valore" della chirurgia robotica nel contesto attuale e prospettico

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about people about health
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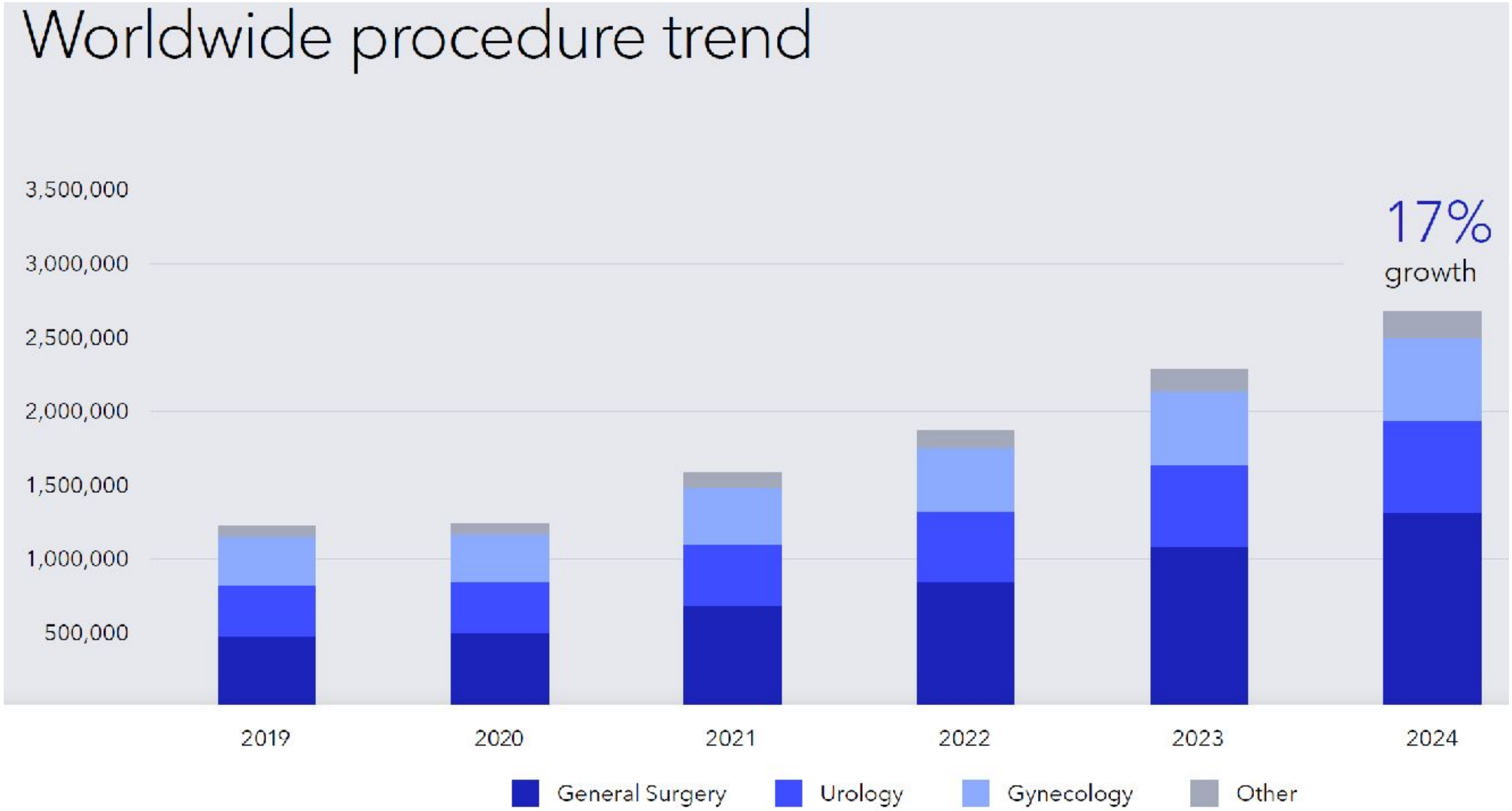
RAS INTUITIVE NEL MONDO E IN EUROPA

1995	Intuitive is founded
1999	The da Vinci surgical system receives CE-Mark approval
2023	The Ion endoluminal system receives CE-Mark approval
2024	The da Vinci Single-Port system receives CE-Mark approval
29	Years during which Intuitive has developed innovative approaches in the field of minimally invasive surgery
14,2 million	Procedures completed using da Vinci systems worldwide to date
2.2 million+	Procedures performed using da Vinci systems in 2023
330,000+	Procedures performed using da Vinci systems in Europe in 2023
8,600+	Da Vinci systems in hospitals around the world
1,500+	Da Vinci systems in Europe
76,000+	Surgeons trained to use the da Vinci surgical system worldwide
35,000+	Surgeons trained outside the USA
25+	Training centers in Europe, located in 18 countries
13,600+	Intuitive employees worldwide
1,300+	Intuitive employees in Europe
38,000+	Peer-reviewed scientific articles that reference Intuitive technologies to date
3,300+	Peer-reviewed scientific articles in 2023
4,800+	Patents issued or owned by Intuitive
2,200+	Active patent applications

RAS INTUITIVE NEL MONDO E IN EUROPA



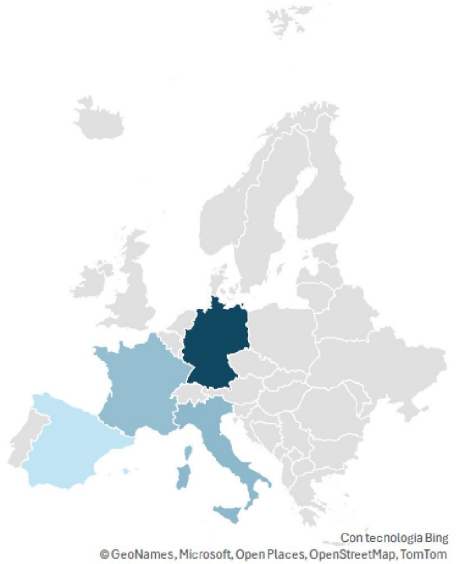
Source: Intuitive 2024 earnings estimate.

DIFFUSIONE RAS IN EUROPA – SISTEMI ROBOTICI

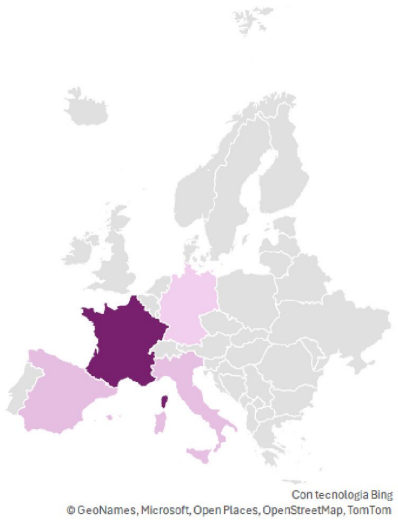
Stato	Popolazione per N.Sistemi robotici	Popolazione	Sistemi robotici	
Germania	269.177	83.445.000	310	*
Francia	325.724	68.401.997	210	*
Italia	274.285	58.971.230	215	
Spagna	274.635	48.610.458	177	

* Dati 2023

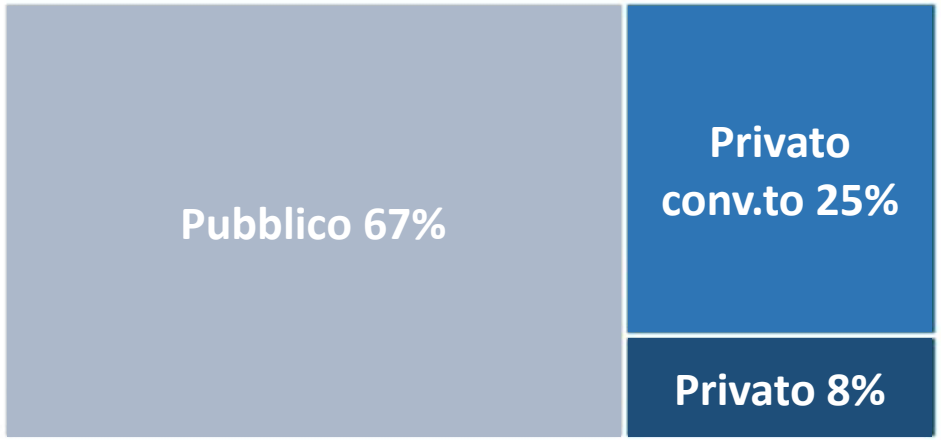
Sistemi robotici installati



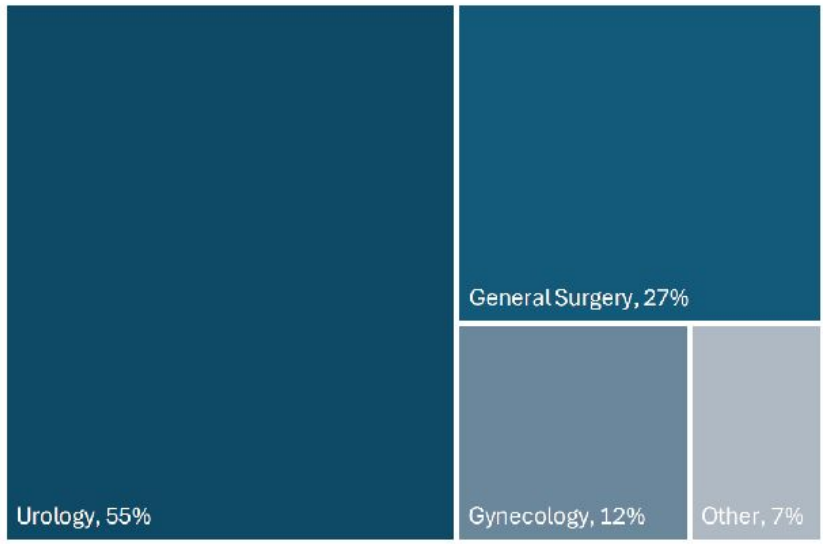
Popolazione per N.Sistemi robotici



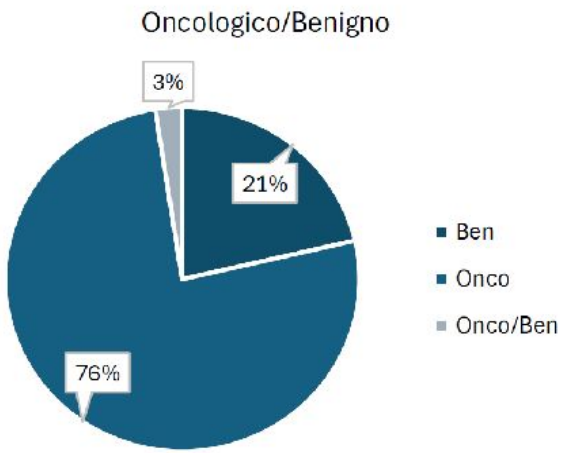
DIFFUSIONE RAS IN ITALIA – SISTEMI ROBOTICI



DIFFUSIONE RAS IN ITALIA PAZIENTI TRATTATI (ANNO 2024)

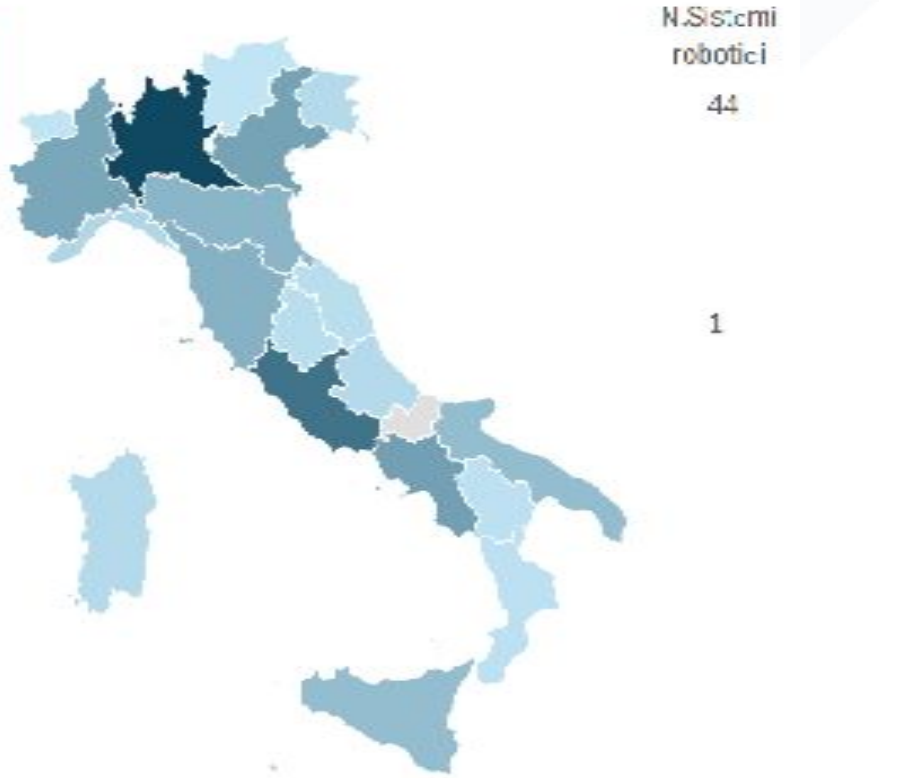


* >350.000 pazienti trattati dal '99



DIFFUSIONE RAS IN ITALIA - DETTAGLIO REGIONALE

Regione	Popolazione per N.Sistemi robotici (Propensione all'investimento)	Popolazione per N.Pazienti trattati (Organizzazione/ Accessibilità)	Pazienti trattati per N.Sistemi robotici (Operatività piattaforme)	N.Sistemi robotici
Abruzzo	317.393	926	343	[illegible]
Basilicata	266.617	3.836	70	[illegible]
Calabria	919.284	4.326	213	[illegible]
Campania	279.695	1.417	197	[illegible]
Emilia-Romagna	317.996	1.046	304	[illegible]
Friuli-Venezia Giulia	298.654	1.081	276	[illegible]
Lazio	178.586	910	196	[illegible]
Liguria	301.828	1.403	215	[illegible]
Lombardia	227.547	942	242	[illegible]
Marche	494.249	2.026	244	[illegible]
Piemonte	236.201	978	242	[illegible]
Puglia	324.222	1.206	269	[illegible]
Sardegna	392.613	2.462	160	[illegible]
Sicilia	399.780	2.749	145	[illegible]
Toscana	244.035	604	404	[illegible]
Trentino-Alto Adige	1.082.702	2.369	457	[illegible]
Umbria	284.356	1.042	273	[illegible]
Valle d'Aosta	122.877	675	182	[illegible]
Veneto	255.380	764	334	[illegible]
Molise				



Pan-European Maturing Clinical Evidence

Large-scale meta-analysis covering period 2010 - 2022

		vs. Lap / VATS	vs. Open
Outcomes that favor RAS	Conversions	49% less likely	
	Blood transfusions	35% less likely	81% less likely
	30-day complications		42% less likely
	Length of stay	0.5 days shorter	2 days shorter
	30-day mortality		39% less likely
	30-day readmissions	29% less likely	50% less likely
Comparable outcomes	Operative time	comparable	
	30-day complications	comparable	
	30-day reoperations	comparable	comparable
	30-day mortality	comparable	
Outcomes that favor lap/VATS/open	Operative time		50 min longer

Results are based on the subset analysis of the COMPARE Study[1] for data from Europe.

[1] *The COMPARE Study: Comparing Perioperative Outcomes of Oncologic Minimally Invasive Laparoscopic, Da Vinci Robotic, and Open Procedures: A Systematic Review and meta-analysis of The Evidence.*

Ricciardi R, Seshadri-Kreaden U, Yankovsky A, Dahl D, Auchincloss H, Patel NM, Hebert AE, Wright V. Ann Surg. 2024 Oct 22.

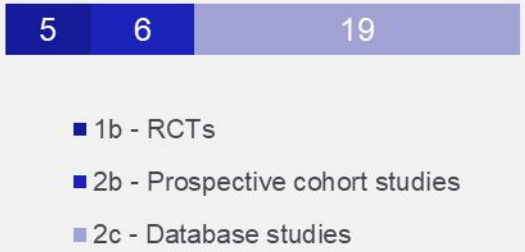
Evidence Navigator: Benign Hysterectomy Summary Slides

Systematic literature review & meta-analysis
as of April 17, 2023

30 publications including

- Robotic-assisted patients: **240,479**
- Laparoscopic patients: **463,269**
- Open patients: **1,331,456**
- Vaginal-assisted patients: **246,678**

Level of evidence



INTUITIVE

WHAT DOES THE LITERATURE SHOW?

Systematic literature review key points: **Robotic-assisted with da Vinci surgical system vs. laparoscopic benign hysterectomy**

Favors robotic-assisted

- ↓ Conversions rate by **70%**
- ↓ Blood transfusions rate by **23%**
- ↓ Estimated blood loss by **47ml**
- ↓ Length of stay by average **0.2 days**
- ↓ 30-day postoperative complications rate by **15%**

Comparable outcomes

- ≈ Operative time
- ≈ Intraoperative complications rate
- ≈ Wound rate
- ≈ Infections rate
- ≈ Bladder injury rate
- ≈ Ureter injury rate
- ≈ 30-day reoperations rate
- ≈ 30-day readmissions rate
- ≈ Return to work
- ≈ Risk of 30-day mortality

Favors laparoscopic

None

Data collected through: April 17, 2023

Significant difference favoring robotic-assisted surgery

No significant difference; comparable outcomes

Significant difference favoring laparoscopic surgery

WHAT DOES THE LITERATURE SHOW?

Systematic literature review key points:
Robotic-assisted with da Vinci surgical system vs. open benign hysterectomy

Favors robotic-assisted

- ↓ Blood transfusions rate by **80%**
- ↓ Estimated blood loss by **199ml**
- ↓ Intraoperative complications rate by **45%**
- ↓ Length of stay by **1.3 days**
- ↓ 30-day postoperative complications rate by **55%**
- ↓ 30-day mortality rate by **88%**

Comparable outcomes

- ≈ Operative time
- ≈ 30-day reoperations rate
- ≈ 30-day readmissions rate
- ≈ Wound rate

Favors open

None

Significant difference favoring robotic-assisted surgery

No significant difference; comparable outcomes

Significant difference favoring open surgery

Data collected through: April 17, 2023

WHAT DOES THE LITERATURE SHOW?

Systematic literature review key points:
Robotic-assisted with da Vinci surgical system vs. vaginal benign hysterectomy

Favors robotic-assisted

- ↓ Estimated Blood loss by **61ml**
- ↓ Intraoperative complications **by 57%**
- ↓ Length of stay by **0.4 days**

Comparable outcomes

- ≈ Conversions rate
- ≈ Blood transfusions rate
- ≈ 30-day postoperative complications rate
- ≈ 30-day reoperations rate
- ≈ 30-day readmissions rate
- ≈ Return to work
- ≈ 30-day mortality rate

Favors vaginal

- ↑ Operative time by **43 min**

Significant difference favoring robotic-assisted surgery

No significant difference; comparable outcomes

Significant difference favoring vaginal surgery

Data collected through: April 17, 2023

Evidence Navigator: Ventral Hernia Repair

Systematic literature review summary as of March 1, 2024

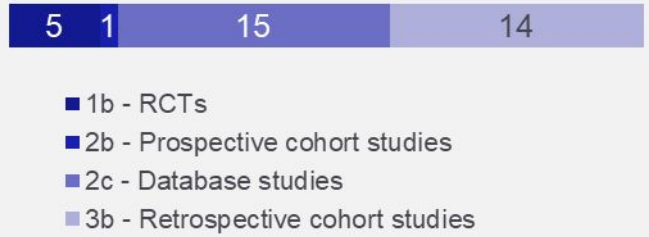
35 publications including

Robotic-assisted patients: **17,118**

Laparoscopic patients: **152,210**

Open patients: **156,376**

Level of evidence



INTUITIVE

WHAT DOES THE LITERATURE SHOW?

Systematic literature review key points: **Robotic-assisted with da Vinci surgical system vs. laparoscopic ventral hernia repair**

Favors robotic-assisted

- ↓ Conversions by **46%**
- ↓ 30-day surgical site infection by **56%**
- ↓ 30-day pain scores (VAS) by **0.8 points**
- ↓ 2-year hernia recurrence by **87%**

Comparable outcomes

- ≈ Postoperative pain medication use at discharge
- ≈ Length of hospital stay
- ≈ Time to return to normal activities
- ≈ 30-day postoperative complications
- ≈ 30-day readmissions
- ≈ 30-day reoperations
- ≈ 30-day emergency department visits
- ≈ 30-day hernia recurrence
- ≈ 90-day hernia recurrence
- ≈ 30-day HerQLes quality of life score
- ≈ 30-day mortality

Favors laparoscopic

- ↓ Operative time by **59 minutes**

Data collected through: March 1, 2024

WHAT DOES THE LITERATURE SHOW?

Systematic literature review key points:
Robotic-assisted with da Vinci surgical system vs. open ventral hernia repair

Favors robotic-assisted

- ↓ Length of hospital stay by **2.6 days**
- ↓ 30-day surgical site infection by **72%**
- ↓ 30-day readmissions by **29%**
- ↓ 30-day hernia recurrence by **84%**
- ↓ Risk of 30-day mortality

Comparable outcomes

- ≈ Postoperative pain medication use at discharge
- ≈ Time to return to normal activities
- ≈ 30-day reoperations
- ≈ 30-day HerQLes quality of life score
- ≈ 30-day post-operative complications

Favors open

- ↓ Operative time by **93 minutes**

Data collected through: March 1, 2024

LA COLLABORAZIONE CON NISAN

6
Aziende Ospedaliere Coinvolte nel Progetto

129
Tipologia di Intervento Chirurgico Robotico

14.884
SDO Analizzate nel 2023

2.205
SDO Analizzate nel 2023 con Sistema Robotico da Vinci

ARNAS Brotzu | Cagliari

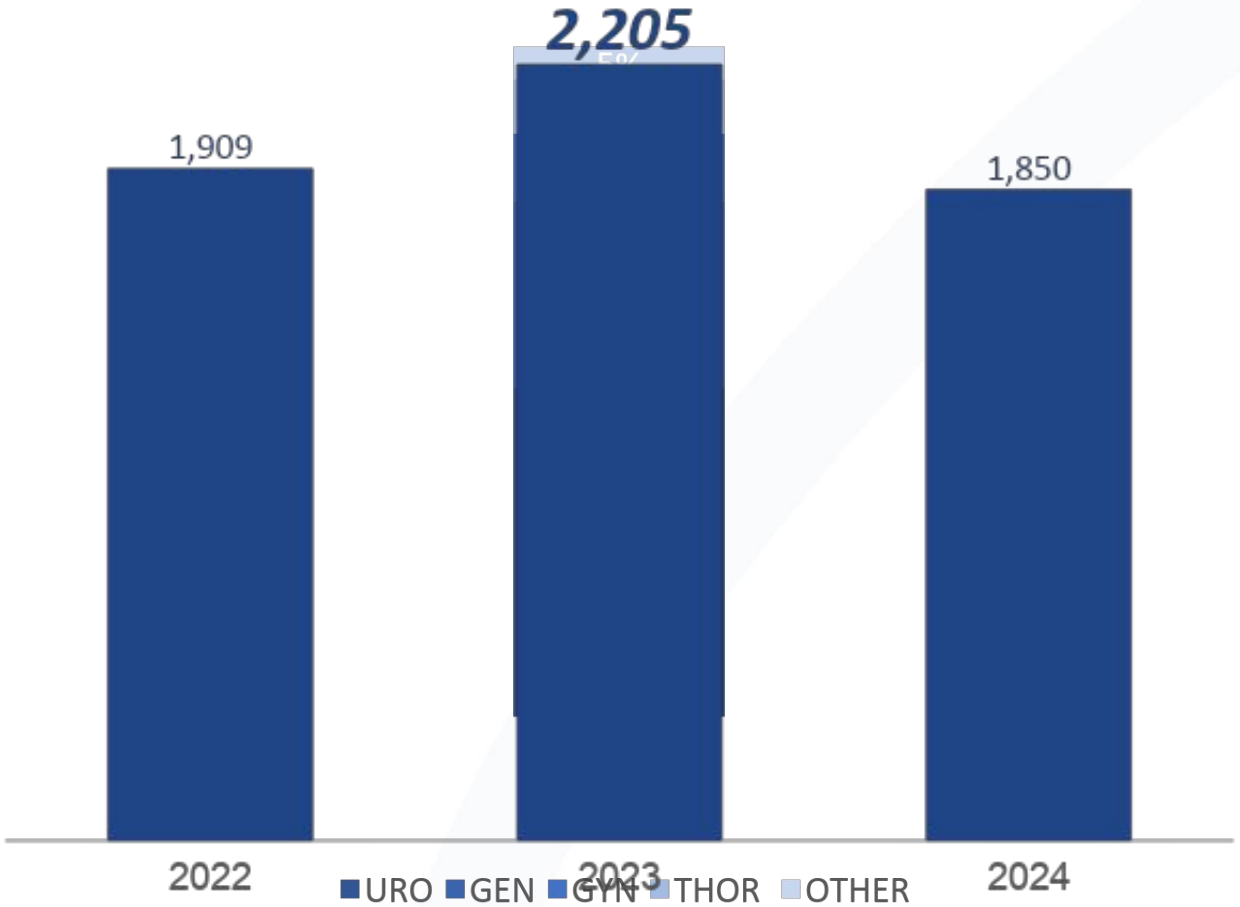
ASST Spedali Civili | Brescia

ASST Lariana - Sant'Anna | Como

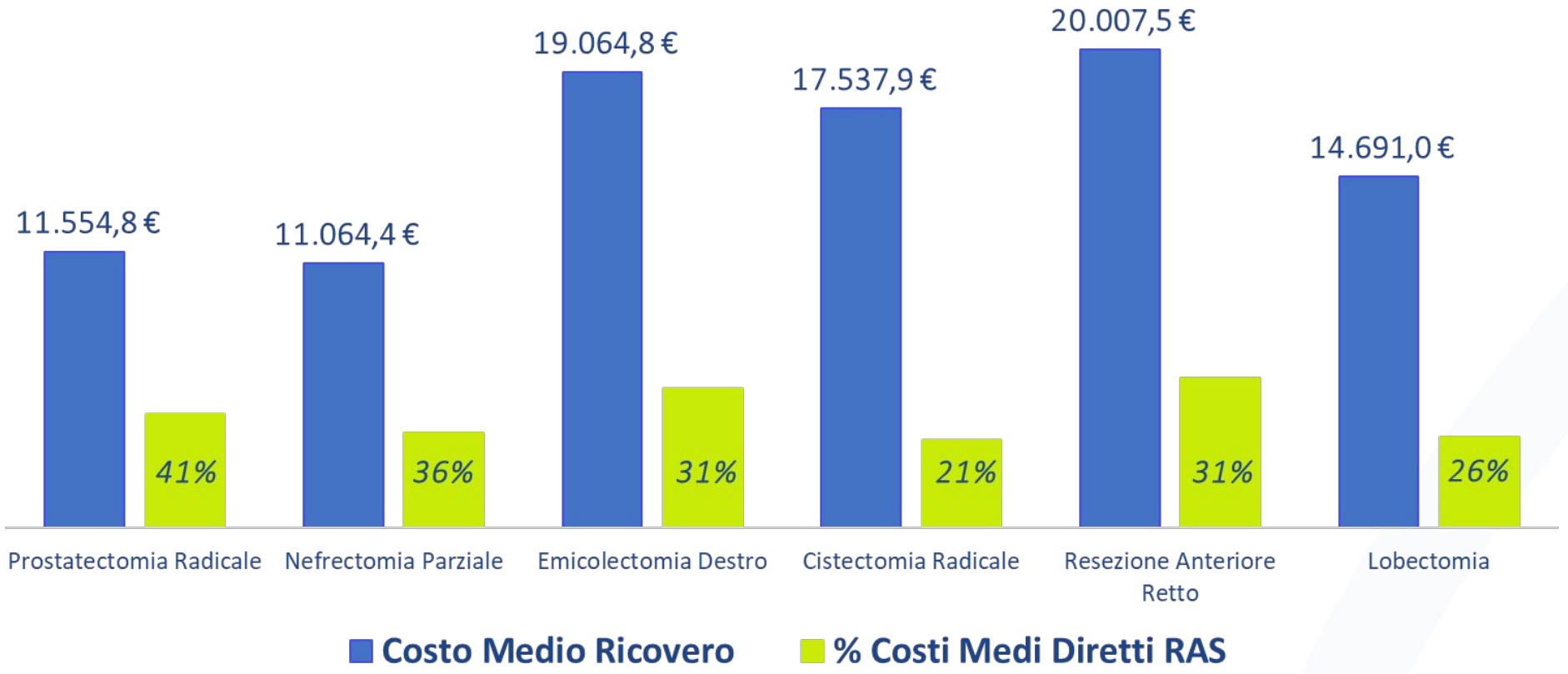
Azienda ospedaliera S.Camillo – Forlanini | Roma

AOU S.Andrea | Roma

Istituto Sacro Cuore Don Calabria | Negrar

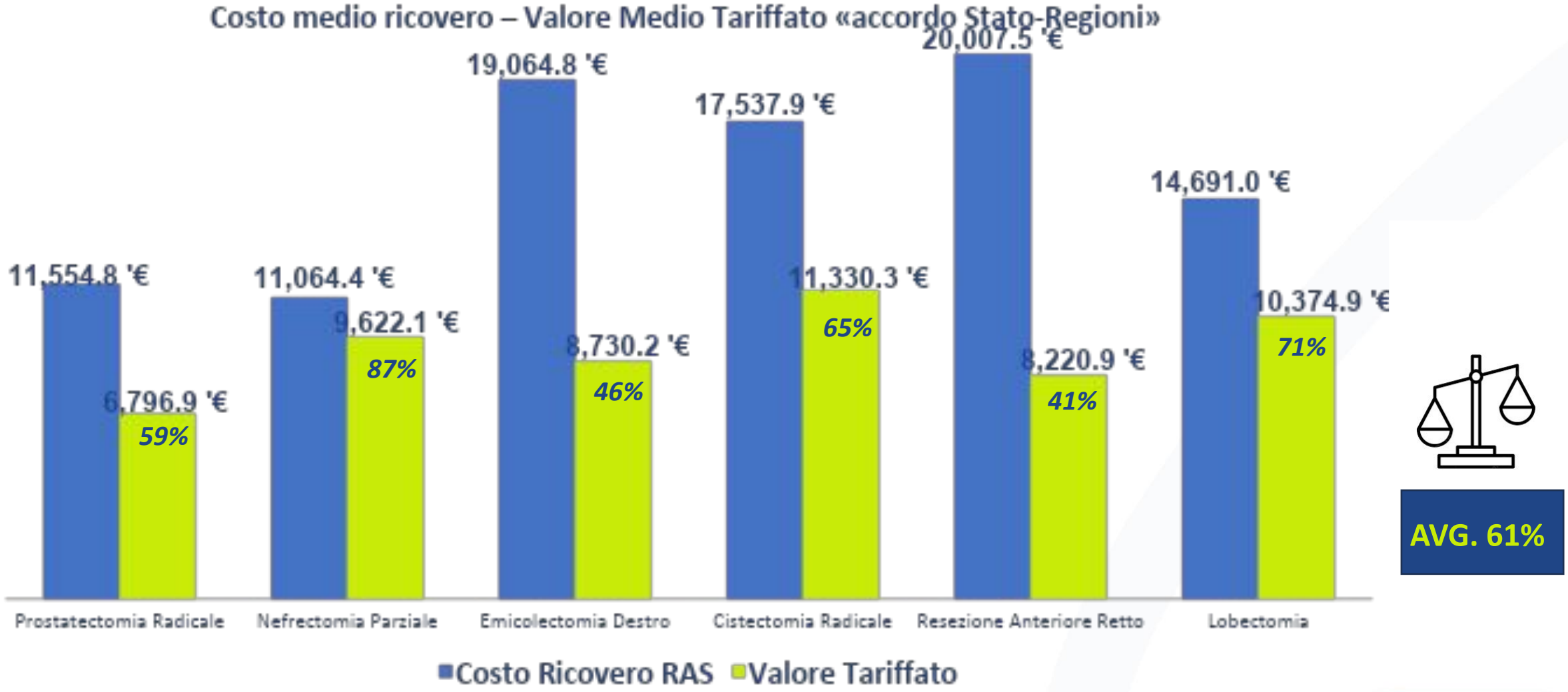


IL PESO DEL COSTO DELLA RAS



AVG. 31%

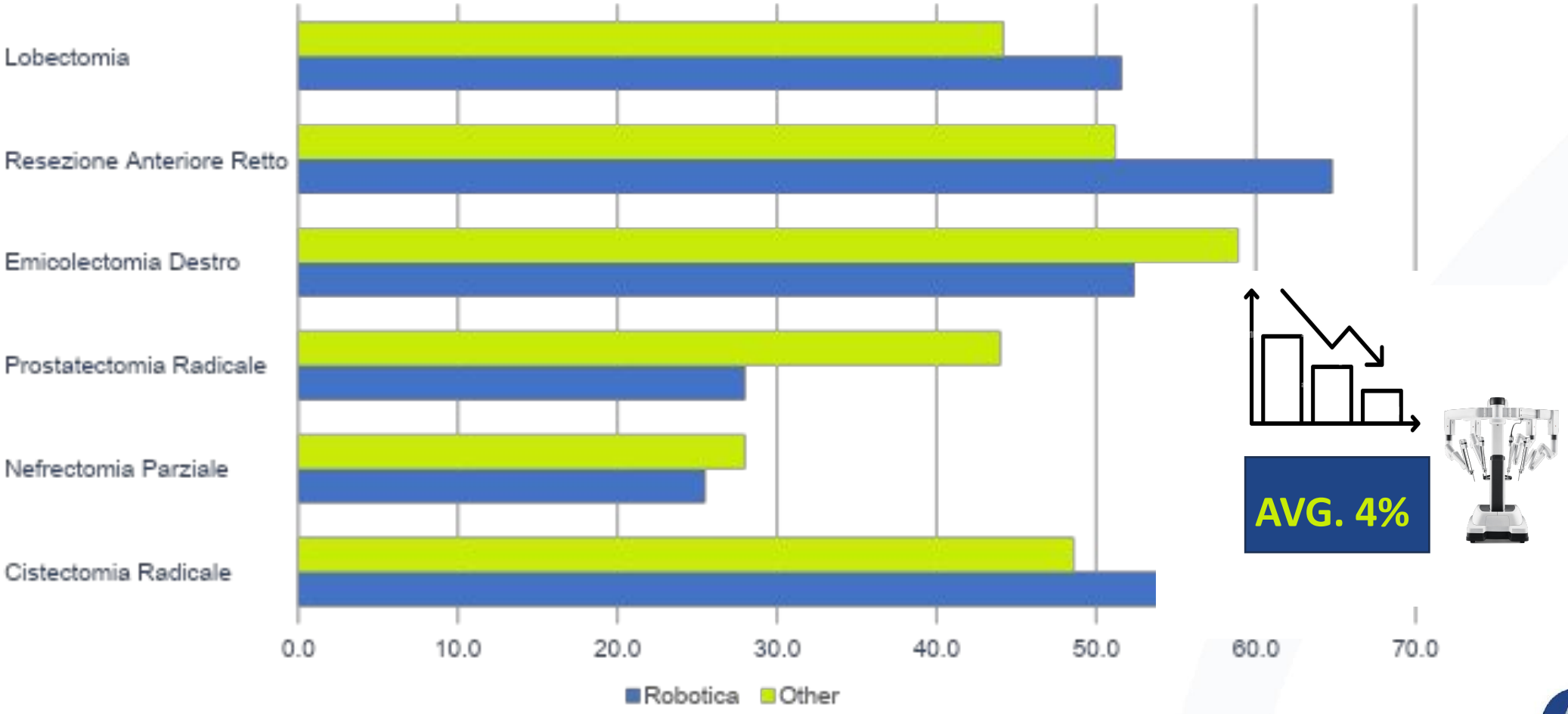
IL COSTO TOTALE DELLA RAS VS VALORE DRG



AVG. 61%

RAS E IMPATTO SULLE RISORSE UMANE

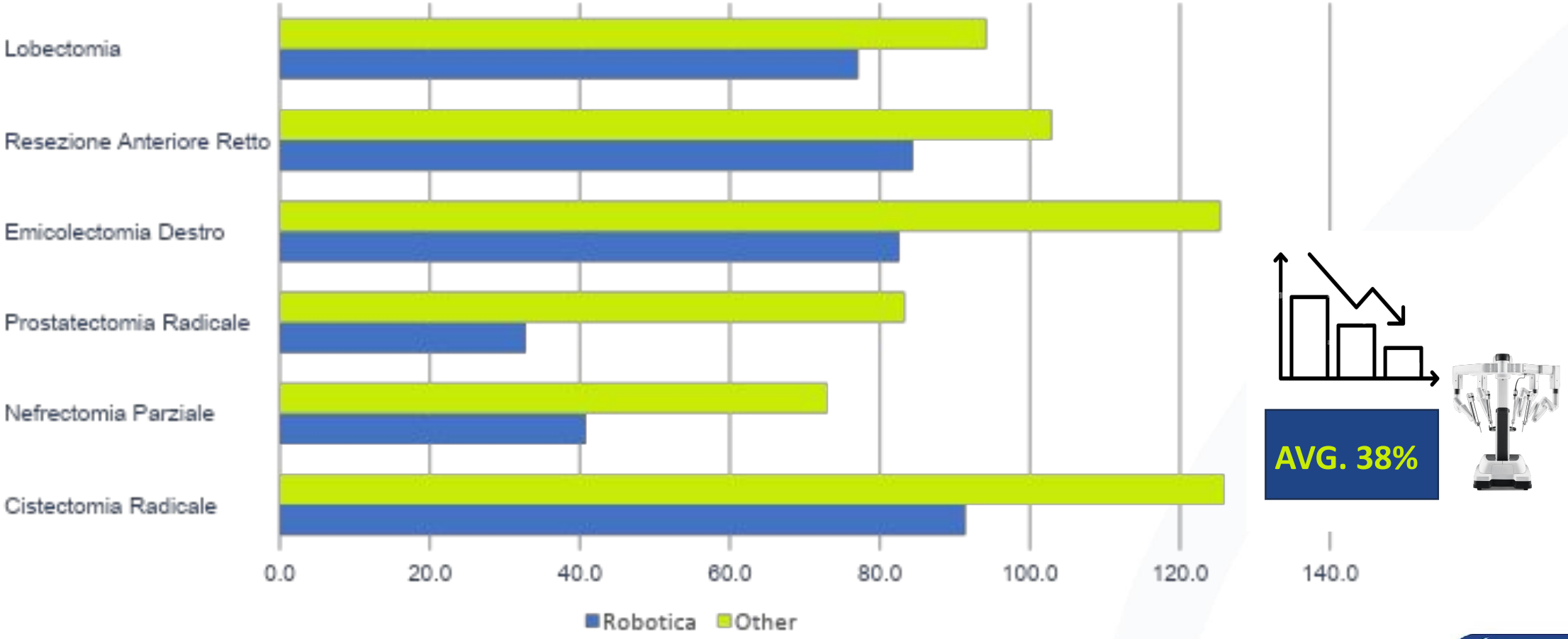
Carico di Lavoro in Ore del Personale Medico (chirurghi & anestesisti)



AVG. 4%

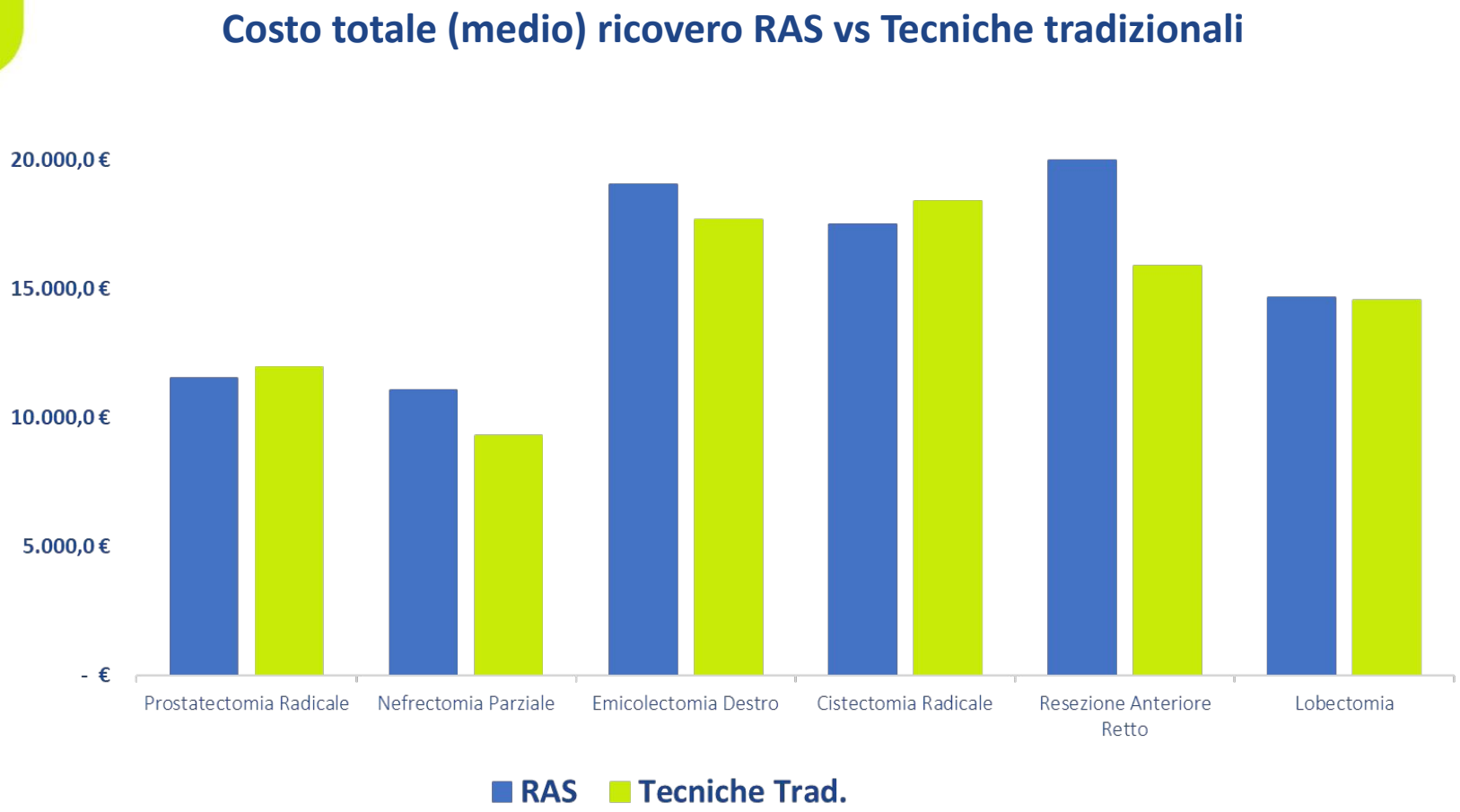
RAS E IMPATTO SULLE RISORSE UMANE

Carico di Lavoro in ore del Personale Infermieristico (strumentisti, circolanti, OSS)



AVG. 38%

IL COSTO TOTALE DELLA RAS VS CH. TRADIZIONALE



- Non sempre il costo totale RAS **è superiore** al costo totale con tecnica tradizionale
- Maggiori costi RAS (piattaforma e DM) compensati da minori costi complessivi connessi a:
  - Inferiore durata delle degenza Ord.
  - Inferiore ricorso a giornate di T.I.
- Minori costi del personale non rappresentano «risparmio» economico, ma aumento disponibilità risorse umane

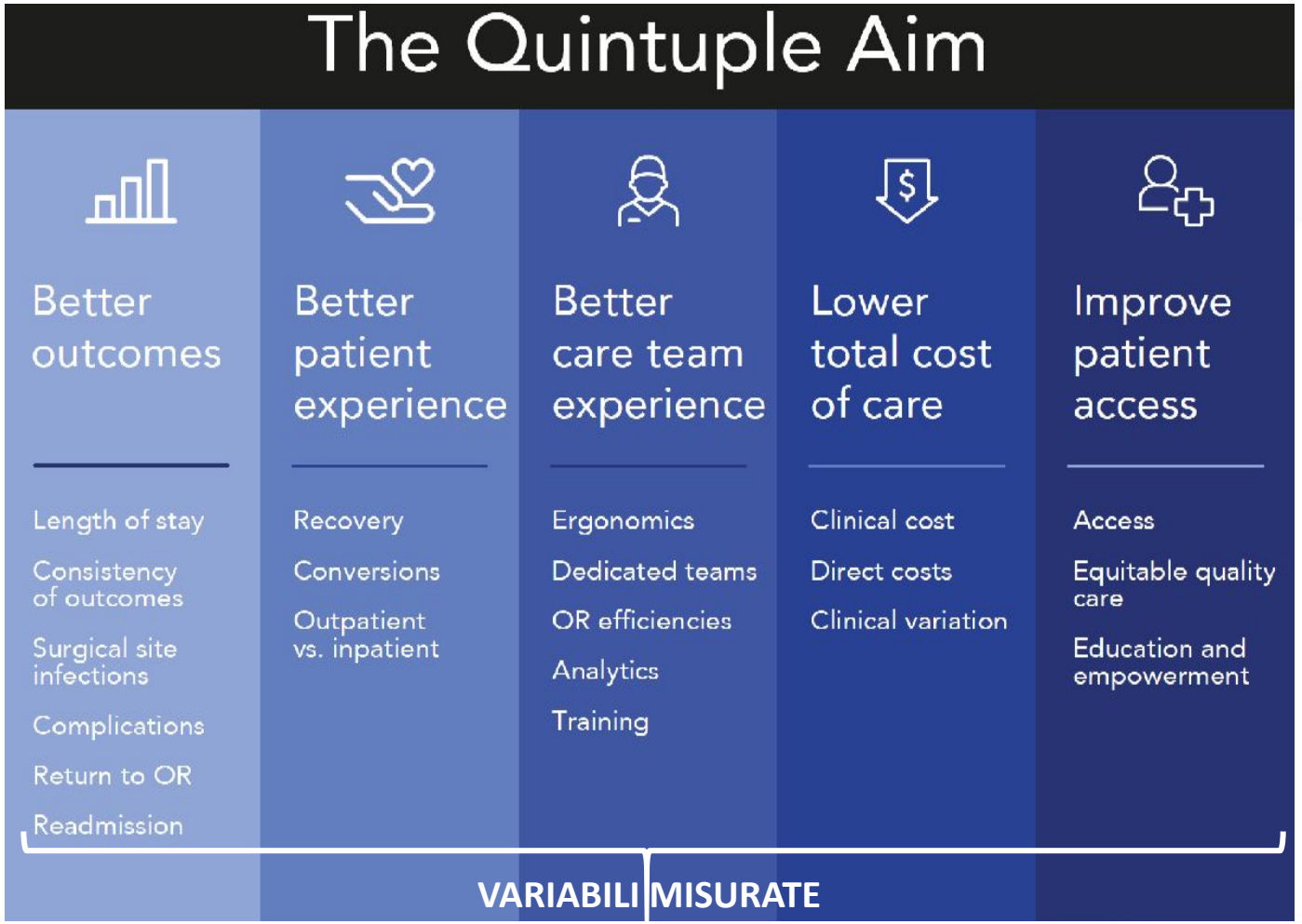
QUINTUPLE AIM E IL MODELLO DI “VALORE”

Presa in carico

Intero percorso paziente (per patologia)

Dalla **Prestazione** al **Valore**

L’allocazione delle risorse **non in base al numero prestazioni** effettuate, ma in funzione degli **effettivi esiti di salute** prodotti



Grazie

per
l’attenzione