

Impact of increased robotic surgery for patients submitted to hysterectomy. Considerations for the Italian hospitals.

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OBJECTIVES

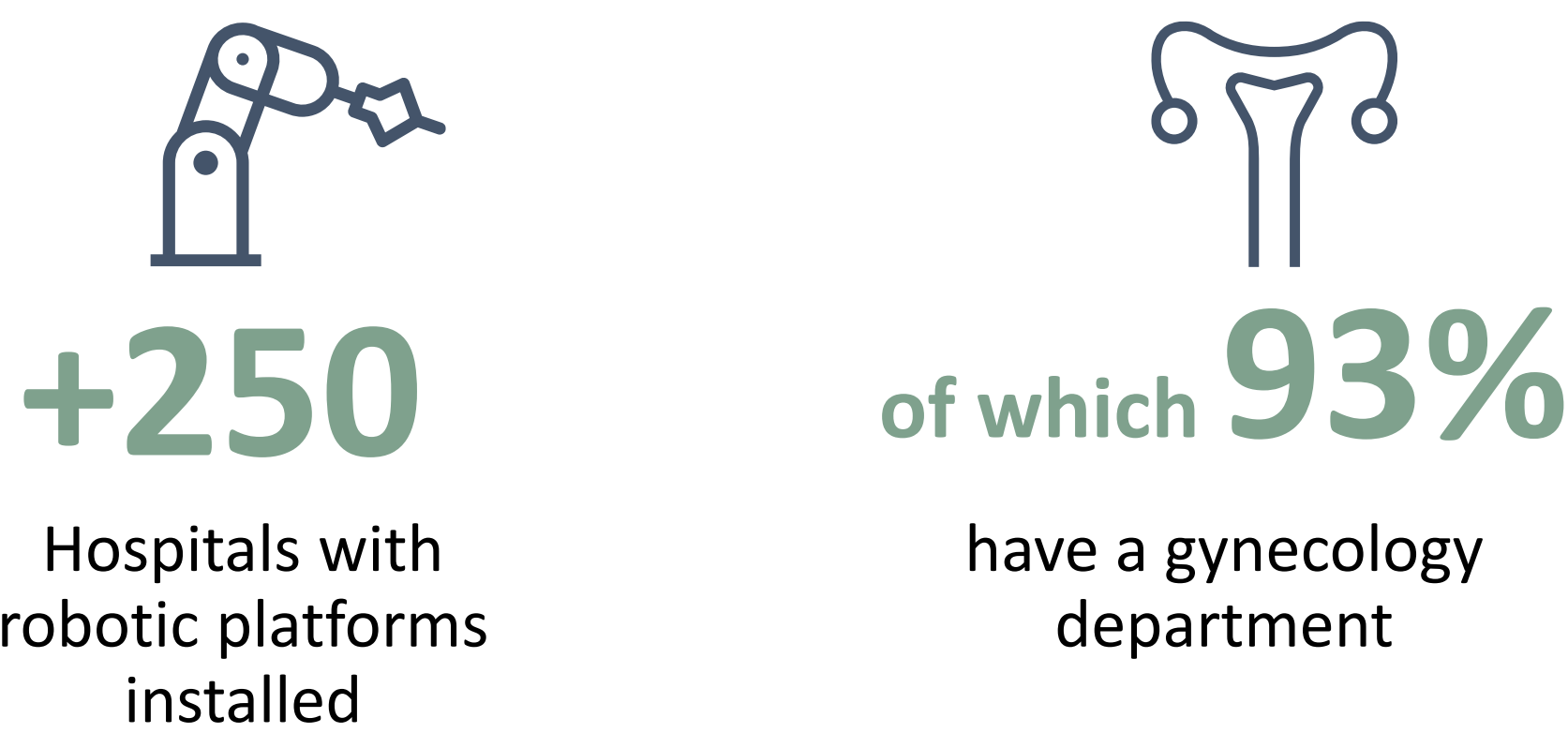
In the last two decades, the use of robotic surgery has experienced rapid growth, despite the significant economic investment required by this technology. Various international publications have studied the reasons for this rapid spread and agree in recognizing the fundamental contribution that robotic surgery has made in significantly increasing the number of minimally invasive procedures, thereby offering a larger number of patients clinical benefits such as less pain, reduced bleeding, shorter hospital stays, and a quick return to daily activities (1,2). Among the areas where robotic surgery has most contributed to the increase in minimally invasive procedures is the gynecological field. In Italy, currently, robotic procedures related to gynecological field represent a very small percentage out of total (>2.000 robotic gynecological procedures per year). This work aims to analyze the benefits of increased adoption of robotics in hysterectomies in Italian hospitals.

METHODS

The number of hysterectomies in Italy has been detected from the Italian National Outcome Plan (4). The average Length of Stay (LOS) was identified from the Ministry of Health report (5) (it is not possible to accurately extract the data pertaining solely to hysterectomy procedures, and therefore the average length of stay corresponding to the reference DRGs for gynecological procedures has been assumed). The hospital daily costs have been detected from the literature (7). A literature review has been conducted to observe the use of robotic surgery in the United States (from 2000 until 2017 the percentage moved from 0.5% to 20% out of total hysterectomies).

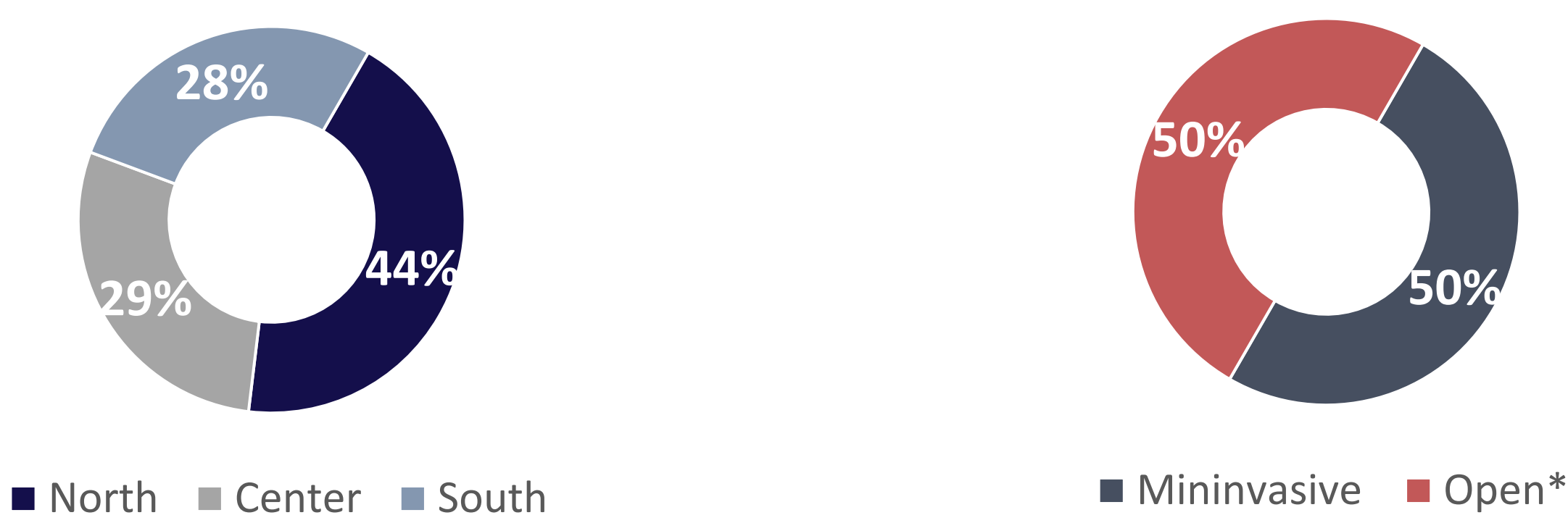


It was reasonable to expect a switch of 10% from open to robotic hysterectomies in the next years in Italy, considering that in Italy:



RESULTS

The National Outcomes Plan (PNE) estimates that in Italy, 55,542 hysterectomies were performed in 2022. From literature data, it is possible to estimate that at least 50% of these procedures are still performed using open surgery (6).



Below are the results obtained by assuming that in the coming years the percentage of robotic hysterectomies will increase by approximately 10%:



* LOS for open is 6-days and for robotic is 3-days
**The saving refers just to the reduction of bed-days. We have considered an estimated cost of €500 (7) per day for the length of hospital stay. Costs of robotic platform and disposables need to be considered hospital by hospital based on the agreement in place.

CONCLUSIONS

The result highlights the positive economic and organizational impact that the use of robotic surgery can have on the healthcare system, increasing the prevalence of minimally invasive surgery, which currently remains below 50% in many therapeutic areas in Italy. It is known that the cost (not considered in this analysis) to implement robotics can be a barrier but the literature reviewed emphasizes factors such as procedure volumes and the involvement of well-trained surgical teams to fully realize the value of robotic surgery and amortize the investment (1,7). It is essential to implement tools that allow for tracking the consequences and benefits of robotic surgery implementation in clinical, economic, and organizational terms compared to existing historical data, both from the perspective of healthcare facilities and patients, and more generally for the healthcare system. It is also desirable to have as comprehensive an adoption of this technology as possible at the healthcare system level in order to maximize its benefits and ensure equitable and appropriate access for all citizens. Thus, further and detailed investigations are necessary to deepen all the elements that can make robotic surgery a sustainable investment in the Italian Healthcare System.

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