



Robotic-Assisted Hysterectomy Reduces Hospital Readmission Rates and Associated Costs for Women with Benign Disease Compared to Other Surgical Methods, Study Finds

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SUNNYVALE, Calif., Feb. 5, 2014 (GLOBE NEWSWIRE) -- New research finds that women with benign disease undergoing robotic-assisted hysterectomy are significantly less likely to be readmitted to a hospital within 30 days of their procedure than women receiving laparoscopic, abdominal (open) or vaginal hysterectomy.¹ This retrospective study also found that robotic-assisted surgeries resulted in significantly lower estimated blood loss, shorter overall hospital stays, and lower total readmission costs.¹ Results from the study are published online in *The Journal of Minimally Invasive Gynecology*.

Hysterectomy, or surgical removal of the uterus, is one of the most common surgical procedures for women in the United States. Approximately 600,000 hysterectomies are performed each year, primarily to address benign conditions such as non-cancerous tumors, pelvic pain and abnormal uterine bleeding.¹

In the study, Dr. Martin Martino of Lehigh Valley Health Network and his colleagues identified 2,554 women with benign disease who had undergone a hysterectomy between January 2008 and December 2012. Based on the clinical records of these patients, the 30-day readmission rates, estimated blood losses, overall lengths of hospital stays, and total readmission costs were determined for each of the four surgical methods, as indicated in the table below¹:

	Robotic-assisted (n = 601)	Laparoscopic (n = 427)	Abdominal (Open) (n = 1,194)	Vaginal (n = 332)
Total Readmissions < 30 Days	1.00% (6)	2.58% (11)*	3.52% (42)*	2.41% (8)*
Mean Estimated Blood Loss (mL)	108.2	315.08*	318.8*	340.8*
Mean Length of Stay (min)	1570.3	3038.5*	3440.5*	3789.2*
Total Readmission Cost (adjusted for inflation to 2012)	\$32,946	\$50,290*	\$328,230*	\$51,264*

*p < 0.05 versus robotic-assisted, achieving statistical significance

One of the limitations of the study outlined by the authors is the inability to account for patients who were readmitted to outside hospitals, though they note that they would expect this finding to be similar for all four groups studied.

It is important to note that the Centers for Medicare & Medicaid Services (CMS) has identified readmissions within 30 days of surgical procedures – including hysterectomies – as a major source of health care expenditures and recommends it as a quality measure for patient care.

Reasons for readmission identified in this study included fever/infection, wound complications, co-morbidities (additional disorders), vaginal bleeding, uncontrolled pain and bowel issues.

Dr. Martin Martino has received travel reimbursement from Intuitive Surgical for educational research unrelated to this study. There are no other conflicts of interest for this study.

Important Information for Patients

Potential risks of any hysterectomy procedure, including robotic-assisted hysterectomy include separation of the vaginal incision, blocked lung artery, and urinary tract injury.²

All surgery presents risk, including *da Vinci* Surgery and other minimally invasive procedures. Serious complications may occur in any surgery, up to and including death. Examples of serious and life-threatening complications, which may require hospitalization, include injury to tissues or organs, bleeding, infection, and internal scarring that can cause long-lasting dysfunction or pain. Risks of surgery include potential for human error and for equipment failure. Risks specific to minimally invasive surgery may include: A longer operative time, anesthesia time and the need for additional or larger incision sites. Your surgeon may also need to convert the procedure to other surgical techniques. Conversion can also lengthen the operation and may lead to increased complications. Temporary pain or nerve injury has been linked to the inverted position often used during abdominal and pelvic surgery. Temporary pain or discomfort may also result from pneumoperitoneum, the presence of air or gas in the abdominal cavity used by surgeons in minimally invasive surgery. Results, including cosmetic results, may vary. Those who bleed easily, have abnormal blood clotting, are pregnant or morbidly obese are typically not candidates for minimally invasive surgery, including *da Vinci* Surgery. Talk to your doctor about their surgical experience. Other surgical approaches are available. Learn the risks of all surgical approaches to decide if *da Vinci* Surgery is right for you. Intuitive Surgical reviews clinical literature from the highest level of evidence available to provide benefit and risk information about use of the *da Vinci* Surgical System in specific representative procedures. We encourage patients and physicians to review all available information on surgical options and treatments in order to make an informed decision. Clinical studies are available through the National Library of Medicine at

www.ncbi.nlm.nih.gov/pubmed. For complete information on risks, safety and indications for use, please refer to www.davincisurgery.com.

About Intuitive Surgical, Inc.

Intuitive Surgical, Inc. (Nasdaq:ISRG), headquartered in Sunnyvale, Calif., is the global leader in robotic-assisted, minimally invasive surgery. Intuitive Surgical develops, manufactures and markets the *da Vinci*[®] Surgical System. Intuitive Surgical's mission is to extend the benefits of minimally invasive surgery to those patients who can and should benefit from it.

About the *da Vinci* Surgical System

The *da Vinci* Surgical System is a surgical platform designed to enable complex surgery using a minimally invasive approach. The *da Vinci* Surgical System consists of an ergonomic surgeon console or consoles, a patient-side cart with three or four interactive arms, a high-performance vision system and proprietary *EndoWrist*[®] instruments. Powered by state-of-the-art technology, the *da Vinci* Surgical System is designed to scale, filter and seamlessly translate the surgeon's hand movements into more precise movements of the *EndoWrist* instruments. The net result is an intuitive interface with improved surgical capabilities. By providing surgeons with superior visualization, enhanced dexterity, greater precision and ergonomic comfort, the *da Vinci* Surgical System makes it possible for skilled surgeons to perform more minimally invasive procedures involving complex dissection or reconstruction. For more information about clinical evidence related to *da Vinci* Surgery, please visit www.intuitivesurgical.com/company/clinical-evidence/.

Forward-Looking Statement

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including statements comparing robotic-assisted hysterectomy procedures for benign diseases to laparoscopic, abdominal (open) or vaginal hysterectomy procedures. These forward-looking statements are necessarily estimates reflecting the best judgment of our management and involve a number of risks and uncertainties that could cause actual results to differ materially from those suggested by the forward-looking statements. These forward-looking statements should, therefore, be considered in light of various important factors, including those under the heading "Risk Factors" in our annual report on Form 10-K for the year ended December 31, 2012, as updated from time to time by our quarterly reports on Form 10-Q and our other filings with the Securities and Exchange Commission. Statements using words such as "estimates," "projects," "believes," "anticipates," "plans," "expects," "intends," "may," "will," "could," "should," "would," "targeted" and similar words and expressions are intended to identify forward-looking statements. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this press release. We undertake no obligation to publicly update or release any revisions to these forward-looking statements, except as required by law.

¹ Martino MA, Berger EA, McFetridge J, et al. A Comparison of Quality Outcome Measures in Patients Having a Hysterectomy for Benign Disease: Robotic vs. Non-robotic Approaches. *The Journal of Minimally Invasive Gynecology*. 2013 Oct 28. [Epub ahead of print]

² Landeen LB, Bell MC, Hubert HB, Bennis LY, Knutsen-Larson SS, Seshadri-Kreaden U. Clinical and cost comparisons for hysterectomy via abdominal, standard laparoscopic, vaginal and robot-assisted approaches. *S D Med*. 2011 Jun;64(6):197-9, 201, 203 passim.

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