Robert Schultz ELE 282 March 21st, 2005 **The da Vinci Surgical System**

The da Vinci Surgical system, created by Intuitive Surgical, represents a major breakthrough in the way surgery is performed. The system incorporates advanced camera and robotic technologies along with real-time synchronization of the surgeon and the robotic arms.

The system includes the surgeon console, patient side cart, EndoWrist instruments, and InSite vision system. The surgeon console includes a display with a 3-D image of the surgical area along with hand controls for the 2 manipulation arms and foot controls for the camera arm. The patient side cart holds 3 of the 4 robotic arms. It contains the 2 manipulation arms along with the endoscope arm, which relays the surgeons command. The EndoWrist instruments are the 17 instruments the surgeon may utilize during the operation. The InSite vision system provides high resolution, real time images of the surgical area.



This picture shows a surgeon at the console. While the da Vinci can be used in a large amount of applications, in terms of cardiac surgery, it holds a great potential for increased patient comfort. After a major heart operation many patients are left with a large scar. This scar can cause a great amount of pain for the patient, which further prolongs the 6-8 week recovery time. With the use of the da Vinci system the scar can be reduced many times over, making the scar and recovery time the same as a minimal invasive procedure.



This shows the scar after a major heart operation. The system also limits the chances of a complication along with a reduced amount of bleeding and internal scarring.

Currently the da Vinci system is being used in 17 countries including the United States. With over 750,000 cardiac procedures performed a year in the United States alone, the da Vinci system will further become a foundation of how cardiac surgery is carried out throughout the world.

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