Coverage Guidelines

Robotically Assisted Surgeries

Disclaimer:
Please note that Baptist Health Plan Coverage Guidelines may be updated throughout the year. A printed version may not be most up to date version available. The health plan reserves the right to review and update this policy as needed. Refer to the website to ascertain that you are utilizing the most current available version. Clinical guideline policies are not intended to serve as treatment guidelines or treatment recommendation. Treating providers must use their own clinical judgment in rendering care to their patient population.

DEFINITION

The field of robotically assisted surgery is attempting to provide the medical profession with another approach to the limitations of traditional open surgery and conventional minimally invasive surgery by providing surgeons the option to operate either directly at the patient’s side or from a distance. In robotically assisted surgery, ports are used to place mechanical surgical tools within the body. The surgeon is positioned at a console, looking into a three-dimensional magnified viewfinder, and performing the surgical procedure by looping fingers around controls on the console. Robotic surgery systems use motion scaling, a process that allows the translation of the operator's natural hand movements into extremely exact, micro-movements of a robotic arm to facilitate precise manipulation of the surgical instruments. The robot hands follow the movement of the surgeon's hands (i.e. cutting, clamping and sewing) just as the surgeon would in an open procedure.

The intent of robotically assisted surgery is to improve precision in minimally invasive surgeries and to convert some open surgical procedures to minimally invasive procedures. This in turn, may reduce pain and shorten recovery times. Robotic devices have been used as an independent assistant handling and retrieving surgical instruments as well as an extension of the surgeon's hands.1

COVERAGE CRITERIA

Baptist Health Plan does not provide separate, additional reimbursement for robotic assistance. Surgical techniques requiring use of robotic surgical systems will be considered integral to surgical services and not a separate service. Reimbursement will be based on the payment for...

Copyright 2016 Healthcare Research & Resolutions. This information is not intended to replace the advice of a healthcare professional or an attorney.
the primary surgical procedure(s).

The choice of standard instrumentation surgery versus robotically assisted surgery should be left to the member and his/her surgeon. Baptist Health Plan does not recommend one method over another.

Robotically assisted surgery is considered experimental/investigational if not performed in accordance with the FDA approved indications for the robotic surgical system.

**MEDICAL BACKGROUND**

Minimally invasive surgical (MIS) procedures that are performed through smaller access ports, have allowed patients to benefit from reduced rates of infection, fewer blood transfusions, less pain, shorter hospital stays, and quicker recovery. However, standard MIS instruments, such as those used in laparoscopic and thoracoscopic procedures, limit the complexity of surgical tasks that can be performed. MIS instruments are long, straight effectors, manipulated through fixed entrance sites, with limited degrees of freedom. Additionally, surgeons often experience muscle fatigue due to poor ergonomic positioning over extended periods of time. To increase the complexity of tasks performed within a body cavity and improve overall ergonomics, a computer interface can be employed between the surgeon and the patient, establishing the basis for robotic surgery.

The first robotic surgery system, the AESOP (Automated Endoscopic System for Optimal Positioning) was approved by the FDA in 1994. The da Vinci System, introduced in 1999 by Intuitive Surgical, Inc. provided dramatic improvements such as 3-D visualization and advanced instrumentation to the robotic surgery field.

Physicians utilizing robotic surgery systems require training and the robotic systems should only be used by physicians who have mastered the robotic skills required to perform the tasks associated with each procedure. Training is available from the system manufacturer and is limited to specific product education. It does not replace the necessary medical training and experience required to perform surgery. The level of training and experience of a particular surgeon can be researched at the American Medical Association's (AMA) "Directory of Physicians in the U.S. " and the American Board of Medical Specialties (ABMS) "Official Directory of Board Certified Medical Specialists".

Contraindications to robotically assisted surgery are much the same as those for minimally invasive surgery, bleeding disorders, history of prior surgery, pregnancy, and significant cardio-pulmonary conditions. The da Vinci System advertises its ability to “sense the surgeon’s hand movements and translate them electronically into scaled-down micro-movements to manipulate the tiny proprietary instruments, and to detect and filter out any tremors in the surgeon’s hand movements.”

Robotic surgical devices have the potential to make surgery safer, physically easier on patients and surgeons, and more cost effective. The intent of robotic surgical devices is to minimize surgical trauma and improve cosmetic results but this end-point has not yet been proven. To perform robotically assisted surgery a surgeon seated at a console controls endoscopic instruments as if doing a normal, hands-on surgery.

Long-distance telesurgery is being explored as a future use of robotic surgery. Currently more clinically meaningful long-term outcomes are needed, but the potential is there. Using robotically assisted surgical technology, patients in rural communities or in dangerous settings such as a battlefield could have access to surgeons who are many miles away. This will not
only provide health care from surgeons who are proficient in a particular field it may reduce the amount of time a patient would have to wait by eliminating travel time.\textsuperscript{6} When perfected this procedure could have dramatic effects in medicine, especially in the military.

On September 7, 2001, a cholecystectomy was performed in Paris by Dr. Jacques Marescaux in New York. The procedure was conducted over a dedicated fiberoptic link to guarantee connectivity and provide minimal lag time. It was one of the earliest remote robotic surgeries and was dubbed “Operation Lindbergh” after Charles Lindbergh’s transatlantic flight.\textsuperscript{7} Hayes, Inc., an evidence-based medical research group has published many reports on robotically assisted surgeries. Surgeries found by Hayes to be safe and efficacious include but may not be limited to:

- Hysterectomy (Increased operative time, reduced blood loss and risk of transfusion, and a shorter hospital length of stay)\textsuperscript{8}
- Minimally invasive coronary artery bypass (MIDCAB) graft surgeries for coronary revascularization (For symptomatic coronary artery disease in low risk patients, the surgery reduces the need for repeat revascularization, decreases the incidence of major cardiac events, and limits recurrence of symptoms of angina pectoris over time.)\textsuperscript{9}
- Mitral valve repair\textsuperscript{10}

Robotically assisted surgeries with sparse, low quality, and/or insufficient evidence available in peer-reviewed published medical literature and/or evidence against the relative safety, efficacy, equivalence, or superiority of a procedure include but may not be limited to:

- Atrial fibrillation\textsuperscript{11}
- Atrial septal defect repair\textsuperscript{12}
- Cardiac valve replacement\textsuperscript{13}
- Coronary artery bypass surgery (both single and multivessel stenosis), and/or CABG\textsuperscript{14}
- MAKOplasty\textsuperscript{®} (MAKO Surgical Corporation)\textsuperscript{15}
- MIDCAB for symptomatic coronary artery disease (CAD) on high-risk patients\textsuperscript{16}
- Minimally invasive cardiac surgery for coronary artery bypass grafting (MICS CABG) for treatment of CAD in members with multi-vessel disease\textsuperscript{17}
- Nephrectomy for renal malignancy\textsuperscript{18}
- Pediatric surgery\textsuperscript{19}
- Prostatectomy (radical)\textsuperscript{20}
- Sacral colpopexy surgery\textsuperscript{21}
- Stereotactic radiosurgery for intracranial indications\textsuperscript{22}
- Stereotactic radiosurgery for thoracic and abdominal indications including lung, prostate, and liver tumors\textsuperscript{23}
- Stereotaxis Niobe Magnetic Navigation System (Stereotaxis Inc.) for catheter ablation of atrial fibrillation and other arrhythmias\textsuperscript{24}
- Stereotaxis Niobe Magnetic Navigation System (Stereotaxis Inc.) for percutaneous coronary intervention in coronary artery disease\textsuperscript{25}

Weaknesses of the available studies include small sample size, lack of long-term follow-up, lack
of randomization and lack of direct comparison of robotic-assisted procedures with conventional open procedures. In addition, comparison of results among studies was difficult due to differences in surgical procedures, types of robotic systems utilized, operative techniques, differences in patient characteristics, and differences in reporting of outcomes.

Evidence from these studies indicates that many robotic-assisted laparoscopic or endoscopic procedures are relatively safe and feasible and can provide initial favorable clinical outcomes such as reduced blood loss and reduced hospital length of stay in selected patients. However, operating times reported for robotically assisted surgery were often longer than those reported for minimally invasive or conventional open techniques, especially for robotically assisted procedures that were performed endoscopically. Conversion to open procedures was required in some cases, and some patients required reoperation. Moreover, several of the studies describe steep learning curves, even after specific training and cadaver practice with the robotic systems.

Overall, the safety of robotic-assisted surgery was comparable to that of standard treatment modalities and no complications specific to the procedure were reported.

REGULATORY INFORMATION

Robotic surgical devices require U.S. Food and Drug Administration (FDA) approval.26

No legislative mandates were found for coverage of robotically assisted surgeries in either Kentucky or Indiana.27

Baptist Health Plan Coverage Guidelines are created to provide members and providers with peer-reviewed, current medical information.

State and federal laws/mandates and contract language have priority over Coverage Guidelines and must be taken into consideration before eligibility for coverage is determined.

Baptist Health Plan Coverage Guidelines may or may not mirror Centers for Medicare & Medicaid Services benefits or coverage offered by any other health insurance company.

For self-funded plans, consult individual plan documents. If there is a conflict between this policy and a self-funded plan document, the provisions of the plan document will govern. In addition, coverage for Medicare Advantage members may differ. This is a result of applicable coverage statements by the Center for Medicare and Medicaid Services (CMS). The National Coverage Determinations, Local Coverage Determinations, and Local Medical Review Policies may be found at the CMS website, http://www.cms.gov. Please note that for all plans, the member’s health plan benefits that are in effect on the rendered date of service must be used in coverage determinations.
### COVERAGE DETAIL

CODES INCLUDE BUT MAY NOT BE LIMITED TO THE FOLLOWING:

NOTE: Baptist Health Plan does not provide separate, additional reimbursement for robotic assistance. Routine and customary laparoscopic CPT and ICD-9-CM codes include robotic assistance.

<table>
<thead>
<tr>
<th>HCPCS Codes</th>
<th>Description</th>
<th>Coverage Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>S2900</td>
<td>Surgical techniques requiring use of robotic surgical system (List separately in addition to code for primary procedure)</td>
<td>No additional reimbursement for the use of surgical robotic devices</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ICD.10 Procedure Codes</th>
<th>Description</th>
<th>Coverage Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>8E090CZ</td>
<td>Robotic Assisted Procedure of Head and Neck Region, Open Approach</td>
<td>No additional reimbursement for the use of surgical robotic devices</td>
</tr>
<tr>
<td>8E093CZ</td>
<td>Robotic Assisted Procedure of Head and Neck Region, Percutaneous Approach</td>
<td>No additional reimbursement for the use of surgical robotic devices</td>
</tr>
<tr>
<td>8E094CZ</td>
<td>Robotic Assisted Procedure of Head and Neck Region, Percutaneous Endoscopic Approach</td>
<td>No additional reimbursement for the use of surgical robotic devices</td>
</tr>
<tr>
<td>8E097CZ</td>
<td>Robotic Assisted Procedure of Head and Neck Region, Via Natural or Artificial Opening</td>
<td>No additional reimbursement for the use of surgical robotic devices</td>
</tr>
<tr>
<td>8E098CZ</td>
<td>Robotic Assisted Procedure of Head and Neck Region, Via Natural or Artificial Opening Endoscopic</td>
<td>No additional reimbursement for the use of surgical robotic devices</td>
</tr>
<tr>
<td>8E0W0CZ</td>
<td>Robotic Assisted Procedure of Trunk Region, Open Approach</td>
<td>No additional reimbursement for the use of surgical robotic devices</td>
</tr>
<tr>
<td>8E0W3CZ</td>
<td>Robotic Assisted Procedure of Trunk Region,</td>
<td>No additional</td>
</tr>
</tbody>
</table>
### REFERENCES


21 Hayes, Inc. Hayes Medical Technology Directory. Robotics for sacral colpopexy. June 20,


**SEARCH TERMS**

- Assistance
- Invasive
- Noninvasive
- Robotical
- Robotically
- Robots
- Surgical
- Surgery