In today’s healthcare environment, balancing patient benefit and cost is a constant challenge. Administrators must decide how to allocate finite resources for the best patient outcome. Changing the variables involved in surgical procedures — operative time, resource utilization, postoperative complications, and patient experience — can help reduce the costs.

By helping surgeons save time, the V-Loc™ wound closure device helps facilities use their resources efficiently.

The dual-angle barbs allow the suture to pass smoothly through tissue in one direction — but prevent it from slipping back through soft tissue. The barbs hold wound surfaces together and distribute tension along the entire length of the suture, without needing a knot to secure the wound.

The V-Loc™ wound closure device eliminates the need to tie knots. And it’s easier to learn to use than conventional sutures.

Compared to non-barbed suture, using V-Loc™ device can have a positive economic impact for both patients and providers. Despite the initial purchase cost, physicians have described any per-suture increases as “negligible, given the increases in efficiency gained.”

Less or equivalent time needed in the OR

The time a surgeon spends in the OR to complete a procedure translates into a total cost for the facility. Longer procedures consume more facility resources — thereby contributing to procedure costs.

The operative time saved by using V-Loc™ device compared to non-barbed suture reflects the amount of suturing required. Overall operative time was significantly decreased in an analysis across gynecology,1-15 where 10 of the 15 studies independently reported significant decreases.3,4,6-13

Less time needed for suturing

The more time needed for suturing, the more difference the V-Loc™ device can make.

A multi-study analysis demonstrated that use of V-Loc™ device significantly decreased suturing time in surgical areas of gynecology1-6,15-17 and plastics18-20 when compared with non-barbed sutures. The decreases were nonsignificant in urologic procedures.22,23

Less surgical difficulty

Surgeons agree that tying conventional surgical knots is a complex skill.24-26 And in laparoscopic procedures, intracorporeal knot tying is widely considered one of the most difficult and time-consuming tasks.3,4,7

Because it eliminates the need to tie knots, the V-Loc™ device is easier to use than conventional sutures:

- Difficulty ratings are significantly lower both for suturing4,6 and for operative procedures overall1,3,4
- Its short learning curve5,11 allows surgeons to perform techniques without knot tying or advanced suturing skills23

Download the full Global Value Dossier here

For more information on the V-Loc™ wound closure device, contact your local wound closure representative.

Visit us at medtronic.com/covidien

Operating costs per minute in various settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>US 2010</td>
<td></td>
</tr>
<tr>
<td>UK 2011</td>
<td></td>
</tr>
<tr>
<td>Wales 2013</td>
<td></td>
</tr>
<tr>
<td>France 2013</td>
<td></td>
</tr>
<tr>
<td>Australia 2013</td>
<td></td>
</tr>
<tr>
<td>Scotland 2016</td>
<td></td>
</tr>
<tr>
<td>France 2016</td>
<td></td>
</tr>
<tr>
<td>US 2017</td>
<td></td>
</tr>
</tbody>
</table>

Costs per minute (2016 USD)

Studies where costs (not charges) have been reported per minute of operating room time. Labels correspond to setting and publication year, noting that currency year may differ according to details in the respective sources. Costs were first converted to United States Dollars (USD) from their respective currencies using the annual average exchange rate for the corresponding year from the United States Internal Revenue Service. [https://www.irs.gov/individuals/international-taxpayers/yearly-average-currency-exchange-rates](https://www.irs.gov/individuals/international-taxpayers/yearly-average-currency-exchange-rates). These costs were subsequently inflated to the year 2016 using consumer price index tables. Costs were reported for general procedures in most cases: US 2010 from a single study,27 UK 2011 estimated from multiple studies,28 Wales 2013 reported by a single NHS trust, France 2013 from a single center for laparoscopic hysterectomy or lymphadenectomy,29 Australia 2013 from a national register,30 Scotland 2016 from regional average. The remaining two studies specified costs per minute for robotic surgeries in studies of hysterectomy or lymphadenectomy29 and hysterectomy.15
Direct analysis of cost of closure in robotic hysterectomy with V-Loc™ wound closure device versus non-barbed suture

Data are presented from the randomized controlled trial comparing the use of V-Loc™ 180 wound closure device and non-barbed suture of Tillmanns 2016. Costs were reported for vaginal cuff closure in robotic hysterectomy. The cost difference shown includes effect on cost due to difference in suturing time and suture consumables. The difference was reported to be statistically significant (**p ≤ 0.01; ***p ≤ 0.001).

Potential economic benefits [of early wound drain removal in the V-Loc™ device group] include earlier hospital discharge, improved patient flow, and reduced health-care costs."


Aggregate change in time with V-Loc™ wound closure device use over non-barbed sutures

Weighted mean change in suturing (A) and operative (B) time are shown, aggregated from multiple studies for the surgical areas shown. Change is given as a percentage of the control (non-barbed) operative time. Only surgical areas with more than one study (indicated in parentheses) reporting the indicated time are included. Statistical significance is indicated below the bars as determined from one sample t-test against the null hypothesis that the time reduction is zero. NS, non-significant (p > 0.05); ** p ≤ 0.01; *** p ≤ 0.001.

Data are presented from the randomized controlled trial comparing the use of V-Loc™ 180 wound closure device and non-barbed suture of Tillmanns 2016. Costs were reported for vaginal cuff closure in robotic hysterectomy. The cost difference shown includes effect on cost due to difference in suturing time and suture consumables. The difference was reported to be statistically significant (**p ≤ 0.01; ***p ≤ 0.001).
Surgeon operative and suturing difficulty ratings for non-barbed sutures and V-Loc™ wound closure device

<table>
<thead>
<tr>
<th>Device</th>
<th>Difficulty rating (VAS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-barbed</td>
<td>$0 - $1,000</td>
</tr>
<tr>
<td>V-Loc™ 180</td>
<td>$1,000 - $2,000</td>
</tr>
<tr>
<td>V-Loc™ 180</td>
<td>$2,000 - $3,000</td>
</tr>
<tr>
<td>V-Loc™ 180</td>
<td>$3,000 - $5,000</td>
</tr>
<tr>
<td>V-Loc™ 180</td>
<td>$5,000 - $6,000</td>
</tr>
</tbody>
</table>

Displayed are surgeon ratings for suturing (S) and overall operative (O) level of difficulty from studies where data were prospectively collected. All procedures were in gynecology (Fouda 2016, Song 2015, Song 2014, and Alessandri 2010).

VAS, visual analog scale.

References


IMPORTANT: Please refer to the package insert for complete instructions, contraindications, warnings and precautions.