LET’S REDUCE SSI TOGETHER
Surgical site infections have contributed to $3 billion to $10 billion in annual costs to healthcare.¹ With the constant threat to reimbursement and patient safety, hospitals have aimed to combat SSI rates through systematic, defined processes.¹, ², ³

To further our dedication to improving both hospital and patient outcomes, we are committed to being a part of the overall solution to reduce surgical site infection (SSI) through research, education, and awareness. Our mission is to enhance patient outcomes by providing multiple platforms to discuss and implement clinically proven methods to reduce the incidence of SSI.

Visit www.stopsurgicalsiteinfection.com to learn more about surgical site infection prevention.
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Visit [www.appliedmedical.com/alexis](http://www.appliedmedical.com/alexis) for more information

Devices listed may not be approved in all markets. Please contact your field implementation team member for more information on availability.

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SSI’s Impact on Hospitals

SSI has added $3 to $10 billion to the cost of healthcare.

2% to 5% of patients undergoing inpatient surgery will develop an SSI.

SSI patients are 60% more likely to spend time in ICU.

SSI patients are 5X more likely to be readmitted to the hospital.

Over 8,000 deaths were associated with over 290,000 cases of SSI in one year.

SSI patients spend an additional 7 - 11 days in the hospital.

SSI patients have a 2 to 11 times higher risk of death than patients without an SSI.

SSI patients require an additional cost of $27,631 per infection.
SSI’s Impact on Hospitals

Guidelines to Prevent SSI:

Among the various bundle elements included in an SSI protocol, multiple guidelines have recommended the use of a wound protector to prevent SSI.

“The use of a wound protector at the extraction site and the irrigation of port sites and extraction site incisions may reduce abdominal wall cancer recurrences.”
Society of American Gastrointestinal and Endoscopic Surgeons (SAGES)

“Use impervious plastic wound protectors for gastrointestinal and biliary tract surgery.”
The Society of Healthcare Epidemiology of America (SHEA)

“The use of an impervious plastic wound protector can prevent SSI in open abdominal surgery, and evidence is strongest for elective colorectal and biliary tract procedures (Guideline 2.8).”
American College of Surgeons and Surgical Infection Society (ACS)

“The panel suggests considering the use of wound protector devices in clean-contaminated, contaminated and dirty abdominal surgical procedures for the purpose of reducing the rate of SSI.”
World Health Organization (WHO)

Successful SSI Prevention Bundles:

The following facilities have demonstrated nearly 50% SSI reduction after implementing an SSI Prevention bundle including Alexis protectors.

Cleveland Clinic\textsuperscript{6,7} 
\begin{itemize}
  \item \textbf{Post-Implementation} \\
  \textbf{One-year} outcomes compared to pre-bundle period \\
  \textbf{Observed infection rates were reduced by nearly one half}
\end{itemize}

Cedars-Sinai\textsuperscript{8,9} 
\begin{itemize}
  \item \textbf{BEFORE} 
  \begin{itemize}
    \item Colorectal SSI rate: 15.27% 
    \item Est. annual costs: $1.9mm
  \end{itemize} \\
  \item \textbf{AFTER} 
  \begin{itemize}
    \item Colorectal SSI rate: 5.8% 
    \item Est. annual costs: $520k
  \end{itemize}
\end{itemize}

Emory University Hospital\textsuperscript{10,11} 
\begin{itemize}
  \item \textbf{BEFORE} 
  \begin{itemize}
    \item Colorectal SSI rate: 18.79%
  \end{itemize} \\
  \item \textbf{AFTER} 
  \begin{itemize}
    \item Colorectal SSI rate: 8.17%
  \end{itemize}
\end{itemize}

Duke University Hospital\textsuperscript{12} 
\begin{itemize}
  \item \textbf{BEFORE} 
  \begin{itemize}
    \item Colorectal SSI rate: 32.9%
  \end{itemize} \\
  \item \textbf{AFTER} 
  \begin{itemize}
    \item Colorectal SSI rate: 8.8%
  \end{itemize}
\end{itemize}
Clinical Evidence

Rate of Superficial Incisional SSI – Alexis® Protectors vs. Standard Retractors

*RRR (relative risk reduction) was defined as the proportion of the control group (standard retractors) experiencing a given outcome minus the proportion of the treatment group (Alexis protector) experiencing the outcome, divided by the proportion of the control group (standard retractors) experiencing the outcome.

†Data reflects superficial/deep incisional and organ space SSI

Reid, et al.13
22.7% (15/66) vs. 20% (6/30)
P = 0.004
79% RRR*

Cheng, et al.14
4.69% (3/64) vs. 0% (0/34)
P = 0.006
100% RRR*

Lee, et al.15
14.6% (7/48) vs. 1.6% (1/61)
P = 0.02
89% RRR*

Horiuchi, et al.16
8.1% (9/110) vs. 0% (0/111)
P = 0.0021
100% RRR*

Hinkson, et al.17
8% (8/100) vs. 1% (1/98)
P = 0.035
87% RRR*†

Colorectal

Wound protectors in reducing surgical site infections in lower gastrointestinal surgery: An updated meta-analysis.22

“Our meta-analysis found that dual-ring wound protectors reduce the odds of SSI in patients undergoing lower gastrointestinal surgery.”

... “We demonstrated evidence of a subgroup difference where dual-ring wound protectors reduced SSIs while single-ring retractors did not, which provides greater insight in the choice of wound protection devices.”

Wound protectors reduce surgical site infection: A meta-analysis of randomized controlled trials.23

“Our study suggests that the use of wound protectors decreases the risk of SSI by 45%. Our number needed to treat suggests that only 10 patients would have to be treated intraoperatively with a wound protector to prevent 1 SSI.”
Barrier wound protection decreases surgical site infection in open elective colorectal surgery: A randomized clinical trial.13

“In this study the use of barrier wound protection in elective open colorectal resectional surgery resulted in a clinically significant reduction in incisional surgical site infections.”

“There was a significant reduction in the incidence of incisional surgical site infections when the wound protector was used: 3 of 64 (4.7%) vs 15 of 66 (22.7%); P = .004.”

ALEXIS O-Ring wound retractor vs conventional wound protection for the prevention of surgical site infections in colorectal resections.14

“Superficial incisional SSI was significantly diminished in the ALEXIS wound retractor group (P=0.006).”

Randomized, controlled investigation of the anti-infective properties of the Alexis retractor/protector of incision sites.16

Wound infection decreased significantly in the With Alexis retractor group by 100% (0% in the With Alexis retractor group vs. 8.1% in the Without Alexis retractor group)

Plastic wound retractors as bacteriological barriers in gastrointestinal surgery: A prospective multi-institutional trial.19

“[U]se of a plastic wound retractor may result in reduced enteric bacterial colonization of the surgical incision site during gastrointestinal surgery. Reduced colonization of the surgical incision site by enteric bacteria due to the use of a plastic wound retractor should result in a reduction in SSI following gastrointestinal surgery.

General

Efficacy of a dual-ring wound protector for prevention of surgical site infections after pancreaticoduodenectomy in patients with intrabiliary stents: A randomized clinical trial.24

“Among adult patients with intrabiliary stents, the use of a dual-ring wound protector during pancreaticoduodenectomy significantly reduces the risk of incisional SSI.”
Use of wound-protection system and postoperative wound-infection rates in open appendectomy: A randomized prospective trial.15

The study was terminated early with 109/300 patients after an interim analysis showed a significant 89% reduction in infection when the Alexis retractor was used (1.6% for wound protection arm vs. 14.6% for traditional retraction arm)

C-Section

Surgical site infection in cesarean sections with the use of a plastic sheath wound retractor compared to the traditional self-retaining metal retractor.17

“[T]he use of plastic-sheath wound retractors such as the Alexis® O C-Section Retractor compared to the traditional Collins self-retaining metal retractor in low risk women, having the first cesarean is associated with a significantly reduced risk of surgical site infection.”

... 

“There is significant reduction in the use of electric cautery for subcutaneous bleeding, bowel handling and postoperative pain. Operator satisfaction is improved and postoperative pain is less.”
IS ALEXIS PART OF YOUR STANDARD OF CARE?
Product Information

360° Protection:
- Reduces surgical site infection\textsuperscript{13-17}
- Shields incision site from bacterial invasion\textsuperscript{18,19}
- Maintains moisture to promote healing\textsuperscript{20}

360° Atraumatic Retraction:
- Maximizes exposure with a minimum incision size
- Offers unparalleled exposure without trauma and pain associated with prolonged point retraction
- Provides hands-free retraction, reducing strain, discomfort and fatigue associated with traditional hand-held retractors\textsuperscript{21}
- Creates tamponade effect to minimize blood loss\textsuperscript{17}

Ultimate Versatility:
- Achieves protection and retraction in a wide range of specialties, patient sizes and incision sizes
- Facilitates rapid and effortless setup
Alexis O
Wound Protector-Retractor

Featuring a rigid retraction ring for maximum exposure
Alexis
Wound Protector-Retractor

Featuring a flexible retraction ring for anatomical conformity
Alexis O
C-Section Protector-Retractor

Features a rigid retraction ring for maximum uterine exposure
Alexis
Laparoscopic System

Featuring a laparoscopic cap and trocar to facilitate specimen extraction
Alexis
Orthopaedic Protector

Featuring a rigid retraction ring for maximum retraction and a flexible retraction ring for maximum versatility
## Procedural Applications

### General
- Inguinal Hernia Repair (XS, S)
- Thyroidectomy (XS, S)
- Appendectomy (S, M)
- Splenectomy (L, XL)
- Pancreatectomy (L, XL)
- Whipple (L, XL, XXL)

### Colon and Rectal
- Lap Colectomy (S, M Laparoscopic System)
- Open Colectomy (L, XL, XXL)

### Bariatric
- Lap Gastric Bypass (XS, S)
- Open Gastric Bypass (L, XL)

### Cardiothoracic
- Video-Assisted Thoracoscopic Surgery (VATS) (XXS, XS, S)
- Mitral Valve Repair/Replacement (S, M)
- Thoracotomy (S, M)
**OB/GYN**
- Postpartum Tubal Ligation (XXS, XS)
- Bilateral Salpingo Oophorectomy (XS, S)
- Lap Hysterectomy (S, M Laparoscopic System)
- Mini-Laparotomy (S, M)
- Myomectomy (S, M)
- Total Abdominal Hysterectomy (S, M, L)
- Cesarean Section (L, XL)

**Breast**
- Lumpectomy (XS, S)
- Mastectomy (S, M)
- Sentinel Lymph Node Biopsy (XXS, XS, S)

**Orthopaedic**
- Total Shoulder Arthroplasty (XS/M, S/S, S/M)
- Total Hip Arthroplasty (S/M, M/L)
## Alexis O Wound Protector-Retractors
*Featuring a rigid retraction ring for maximum exposure*

<table>
<thead>
<tr>
<th>Reorder No.</th>
<th>Size</th>
<th>Sheath Length</th>
<th>Incision Range</th>
<th>Qty/Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>C8401*</td>
<td>Small</td>
<td>18cm</td>
<td>2.5-6cm</td>
<td>5</td>
</tr>
<tr>
<td>C8402</td>
<td>Medium</td>
<td>18cm</td>
<td>5-9cm</td>
<td>5</td>
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<tr>
<td>C8403</td>
<td>Large</td>
<td>25cm</td>
<td>9-14cm</td>
<td>5</td>
</tr>
<tr>
<td>C8404</td>
<td>X-Large</td>
<td>34cm</td>
<td>11-17cm</td>
<td>5</td>
</tr>
<tr>
<td>C8405</td>
<td>XX-Large</td>
<td>36cm</td>
<td>17-25cm</td>
<td>5</td>
</tr>
</tbody>
</table>

*Models including a tether to facilitate device removal

## Alexis Wound Protector-Retractors
*Featuring a flexible retraction ring for anatomical conformity*

<table>
<thead>
<tr>
<th>Reorder No.</th>
<th>Size</th>
<th>Sheath Length</th>
<th>Incision Range</th>
<th>Qty/Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>C8313*</td>
<td>XX-Small</td>
<td>20cm</td>
<td>1-3cm</td>
<td>5</td>
</tr>
<tr>
<td>C8323*</td>
<td>XX-Small, Short</td>
<td>11cm</td>
<td>1-3cm</td>
<td>5</td>
</tr>
<tr>
<td>C8312*</td>
<td>X-Small</td>
<td>19cm</td>
<td>2-4cm</td>
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</tr>
<tr>
<td>C8322*</td>
<td>X-Small, Short</td>
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<td>2-4cm</td>
<td>5</td>
</tr>
<tr>
<td>C8301*</td>
<td>Small</td>
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<td>5</td>
</tr>
<tr>
<td>C8302</td>
<td>Medium</td>
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<td>5-9cm</td>
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<tr>
<td>C8303</td>
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<td>9-14cm</td>
<td>5</td>
</tr>
<tr>
<td>C8304</td>
<td>X-Large</td>
<td>34cm</td>
<td>11-17cm</td>
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</tr>
</tbody>
</table>

## Alexis O C-Section Protector-Retractors
*Featuring a rigid retraction ring for maximum uterine exposure*

<table>
<thead>
<tr>
<th>Reorder No.</th>
<th>Size</th>
<th>Sheath Length</th>
<th>Incision Range</th>
<th>Qty/Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>G6313</td>
<td>Large</td>
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<td>9-14cm</td>
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<tr>
<td>G6314</td>
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<td>34cm</td>
<td>11-17cm</td>
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</table>
**Alexis Laparoscopic Systems with the Kii® Fios® First Entry Access System**
*Featuring a laparoscopic cap and trocar to facilitate specimen extraction*

<table>
<thead>
<tr>
<th>Reorder No.</th>
<th>Size</th>
<th>Sheath Length</th>
<th>Incision Range</th>
<th>Qty/Box</th>
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</thead>
<tbody>
<tr>
<td>C8701*</td>
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<td>2.5-6cm</td>
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</tr>
<tr>
<td>C8702</td>
<td>Medium</td>
<td>18cm</td>
<td>5-9cm</td>
<td>5</td>
</tr>
</tbody>
</table>

*Models including a tether to facilitate device removal

**Alexis Orthopaedic Protector**
*Featuring a rigid retraction ring for maximum retraction and a flexible retraction ring for maximum versatility*

<table>
<thead>
<tr>
<th>Rigid Retraction Ring</th>
<th>Flexible Retraction Ring</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>HR000</td>
<td>HR100</td>
</tr>
<tr>
<td>X-Small/Medium</td>
<td>X-Small/Medium</td>
</tr>
<tr>
<td>14cm</td>
<td>14cm</td>
</tr>
<tr>
<td>2.5-7cm</td>
<td>2.5-7cm</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

- **HR000**: X-Small/Medium 14cm 2.5-7cm 5
- **HR001**: Small/Small 14cm 2.5-8cm 5
- **HR004**: Small/Medium 14cm 2.5-8cm 5
- **HR005**: Medium/Large 17cm 5-13cm 5

- **HR100**: X-Small/Medium 14cm 2.5-7cm 5
- **HR101**: Small/Small 14cm 2.5-8cm 5
- **HR104**: Small/Medium 14cm 2.5-8cm 5
- **HR105**: Medium/Large 17cm 5-13cm 5
References


