

# Clinical Literature Review

Title	Rates of infection after colonoscopy and esophagogastroduodenoscopy in ambulatory surgery centres in the USA
Authors	Wang, P., Xu, T., Ngamruengphong, S., Makary, M. A., Kalloo, A., Hutfless, S.
Journal	GUT Official Journal of the British Society of Gastroenterology, Sept 2018
Article Abstract	<p><b>Background</b> Over 15 million colonoscopies and 7 million esophagogastroduodenoscopies (OGDs) are performed annually in the USA. We aimed to estimate the rates of infections after colonoscopy and OGD performed in ambulatory surgery centres (ASCs).</p> <p><b>Methods</b> We identified colonoscopy and OGD procedures performed at ASCs in 2014 All-Payer claims data from six states in the USA. Screening mammography, prostate cancer screening, bronchoscopy and cystoscopy procedures were comparators. We tracked infection-related emergency department visits and unplanned in-patient admissions within 7 and 30 days after the procedures, examined infection sites and organisms and analysed predictors of infections. We investigated case-mix adjusted variation in infection rates by ASC.</p> <p><b>Results</b> The rates of post endoscopic infection per 1000 procedures within 7 days were 1.1 for screening colonoscopy, 1.6 for non-screening colonoscopy and 3.0 for OGD; all higher than screening mammography (0.6) but lower than bronchoscopy (15.6) and cystoscopy (4.4) (p,0.0001). Predictors of post endoscopic infection included recent history of hospitalization or endoscopic procedure; concurrence with another endoscopic procedure; low procedure volume or non-freestanding ASC; younger or older age; Black or Native American race and male sex. Rates of 7-day post endoscopic infections varied widely by ASC, ranging from 0 to 115 per 1000 procedures for screening colonoscopy, 0 to 132 for non-screening colonoscopy and 0 to 62 for OGD.</p> <p><b>Conclusions</b> We found that post endoscopic infections are more common than previously thought and vary widely by facility. Although screening colonoscopy is not without risk, the risk is lower than diagnostic endoscopic procedures.</p>
Methods	<p>This study was a retrospective analysis of electronic data reporting of All-Payer claims.</p> <ul style="list-style-type: none"> <li>• The study authors identified colonoscopy and OGD procedures performed in ASCs and tracked patients' emergency department (ED) visits and hospitalizations within 7 and 30 days after endoscopic procedures.</li> <li>• Data was obtained from statewide ASC, ED and in-patient claims data from Florida, New York, Georgia, Nebraska, and Vermont.</li> <li>• Data was gathered from Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP). CA data was gathered from Office of Statewide Health Planning and Development (OSHPD).</li> <li>• The study authors controlled for infections reported at the time of the procedure.</li> </ul>

# Clinical Literature Review

Methods	<p><b>What was measured:</b></p> <ul style="list-style-type: none"> <li>• 7 &amp; 30-day ER &amp; unplanned in-patient admission rates after endoscopic procedure</li> <li>• 462,068 screening colonoscopies at 1157 ASCs</li> <li>• 914,140 non-screening colonoscopies at 1202 ASCs</li> <li>• 873,128 OGDs at 1212 ASCs</li> <li>• 647,212 screening mammographies at 338 ASCs</li> <li>• 30,116 bronchoscopies at 665 ASCs</li> <li>• 6,8432 cystoscopies at 912 ASCs</li> </ul>
Results	<p><b>7 day results per 1000 in ASCs</b></p> <ul style="list-style-type: none"> <li>• 1.1 screening colonoscopy</li> <li>• 1.6 non-screening colonoscopy</li> <li>• 3.0 esophagogastroduodenoscopy (OGD)</li> <li>• 15.6 bronchoscopy</li> <li>• 4.4 cystoscopy</li> <li>• 0.6 screening mammography (control)</li> </ul> <p><b>Predictors of post endoscopic infection</b></p> <ul style="list-style-type: none"> <li>• Recent history of hospitalization or endoscope procedure</li> <li>• Concurrence with another endoscopic procedure</li> <li>• Low procedure volume or non-free-standing ASC</li> <li>• Age: Younger or older</li> <li>• Race: Black or Native American</li> <li>• Sex: Male</li> </ul> <p><b>Patient Predictors</b></p> <ul style="list-style-type: none"> <li>• Age, Sex, Race</li> <li>• History of hospitalization within 30 days (1) highest risk</li> <li>• GI endoscopic procedure within 30 days prior to procedure (2) highest risk</li> </ul> <p><b>Procedure predictors</b></p> <ul style="list-style-type: none"> <li>• Level of invasiveness and concurrence with other GI procedures on the same day (no bx vs bx, polypectomy, etc.)</li> <li>• Another procedure was coded on the same day</li> </ul> <p><b>Facility predictors</b></p> <ul style="list-style-type: none"> <li>• State where ASC was located</li> <li>• Annual procedure volume</li> <li>• Hospital-owned vs. freestanding</li> <li>• Multi-specialty or gastroenterology-specific</li> </ul>

# Clinical Literature Review

<p>Conclusions</p>	<p><b>ASCs with the highest volumes had the lowest infection rates</b></p> <ul style="list-style-type: none"> <li>• 1/1000 for screening colonoscopy &gt;3/1000 for OGD</li> </ul> <p><b>Twofold to fivefold higher than previously reported ranges of infections</b></p> <ul style="list-style-type: none"> <li>• 0%-12.3% for screening colonoscopy</li> <li>• 0%-12.8% for non-screening colonoscopy</li> <li>• 0%-4.7% for OGD</li> </ul> <p>Endoscope associated infection (EAI) rates are likely underreported. In an August 2013 AJIC article Ofstead, et al. reported confusion in how data was gathered and how math was used to determine the commonly stated EAI infection rate of 1 in 1.8 million procedures. The study suggests that the estimates are inaccurate and based on flawed methodology.</p>
<p>Messaging</p>	<ul style="list-style-type: none"> <li>• Lower-volume centers have a higher rate of infection. This may be due to their overhead spread among fewer procedures and/or the fact that the procedures are being done in a multi-specialty facility and reprocessing endoscopes is not within the established expertise of the staff.             <ul style="list-style-type: none"> <li>○ What should you do:                 <ul style="list-style-type: none"> <li>– Share this information with your ASC customers.</li> <li>– Leverage our education offerings to build trust and partnership. Offer solutions to address process gaps or staff awareness/training.</li> <li>– Use EPP programs to drive adoption and lessen the hit to the facilities bottom line.</li> </ul> </li> </ul> </li> <li>• Most ASCs are partly or wholly physician owned. Therefore, the individual physicians often weigh in on new products to make efficient and cost-effective purchases. They are probably reluctant to admit causing patient infections from procedures done in their facility. This is a new study and new information for a physician to absorb.             <ul style="list-style-type: none"> <li>○ When discussing this paper with a physician, remember:                 <ul style="list-style-type: none"> <li>– Keep the tone non-confrontational; the physician probably doesn't want to be associated with higher-than-normal infection rates and may become defensive if approached aggressively.</li> <li>– Reassure your customers that this paper is a snapshot of 6 states and a population that represents about 30% of all colonoscopies in the US.</li> <li>– There are many steps that can be taken to improve infection rates without buying a lot of product (e.g., proper process, procedures, PPE usage, etc.).</li> <li>– You should work with the ASC to improve their processes. Cantel has the expertise and the products to help ensure a safe, patient-ready endoscope for each procedure.</li> </ul> </li> </ul> </li> </ul>