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**Supplementary Table S1:** Characteristics of the ACS models of included sites

Site	Staff model on ACS	Members of ACS team (in addition to surgeon)	Dedicated ACS OR	Dedicated ACS beds
London Health Sciences Centre	Single surgeon x 7 days Elective practice suspended	Nurse Practitioner 1-2 Senior Residents 1 Intermediate resident 1-2 junior residents	7 hours/day Monday - Friday	No
University of Alberta	Single surgeon x 7 days Elective practice suspended	Hospitalist 1-Fellow 1-Senior Resident 1 – 2 junior residents	8 hours/day Monday - Friday	Yes
QE II Health Sciences Centre	Single surgeon Mon-Friday during daytime Rotating night time coverage Single surgeon Saturday-Sunday	2-3 senior residents (R3-R4) 2 junior residents 1-2 clerks No nurse practitioner	12hrs 5d/week shared resource on evenings and weekends	Yes
Hamilton Health Sciences	Single surgeon x 7 days Elective practice suspended	1-2 junior residents 1 senior resident	No dedicated ACS OR; access to daytime Emerg OR shared by all surgical services starting at noon	No
St. Joseph's Health Care	Single surgeon x 7 days/nights Elective practice suspended	1-2 junior residents 1 senior resident	No dedicated ACS OR; access to daytime Emerg OR shared by all surgical services starting at 11:00	No
Vancouver General Hospital	3 teams (ACS 1, 2, 3) with rotating 24 hr call Surgeons take 24 hr calls with their teams Surgeons block most activities on their ACS weeks, and all activities on their 2-3 intake days	Each team has: 1 Fellow or Senior Resident 1-2 Junior residents	Full days (9 hours) Monday to Friday Half days (3 hours) Saturday and Sunday Plus emergency time at night	No

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William Osler Health System	EGH: 1 ACS surgeon running service 5 days a week and 50% call Weekend coverage by on call surgeon. BCH: Similar with 2 ACS surgeons	No additional staff	1-2 Half days per week  Preferential access to any ORs finished early	No
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EGH = Etobicoke General Hospital; BCH = Brampton Civic Hospital

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**Supplementary Table S2:** Description of the Clavien-Dindo classification of complications<sup>11</sup>

<b>Clavien-Dindo</b>	<b>Description</b>
<b>Grade 1</b>	Any deviation from the normal postoperative course without the need for pharmacological treatment or surgical, endoscopic and radiological interventions. This includes infections opened at the bedside.
<b>Grade 2</b>	Requiring pharmacological treatment with drugs other than such allowed for grade I complications. Blood transfusions and total parenteral nutrition are also included.
<b>Grade 3</b>	Requiring surgical, endoscopic or radiological intervention
<b>Grade 4</b>	Life-threatening complication (including CNS complications)‡ requiring IC/ICU-management
<b>Grade 5</b>	Death