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Vascular surgery activity condition is a common language for uncommon times



Thomas L. Forbes, MD, *Toronto, Ontario, Canada*

Surgeons are entering unprecedented times as we struggle with the realities of the COVID19 pandemic. Our hospitals and cities are at different stages of the pandemic curve, ranging from those in the early preparation phases to those being overwhelmed by infected patients. Greater proportions of hospital resources are being appropriately allocated to COVID19 patients at each stage along this curve, resulting in a decline in elective and, in some cases, emergency surgery. Surgeons have made difficult decisions regarding withholding surgery in the face of declining resources, and although individual surgical societies and expert bodies have attempted to direct reductions in elective surgical activity, a unifying language and approach that transcends all surgical disciplines is lacking. The following suggests an approach that is based on a well-known crisis alert status system.

Most will be aware of the Defense Readiness Condition (DEFCON), which is an alert status used by the United States military to describe five graduated levels of readiness ranging from DEFCON 5 (least severe) to 1 (most severe). It is a straightforward system that describes the current military status in response to a threat and is applicable to all branches of the military. It also provides for escalation and de-escalation through the five levels in response to that threat.

The COVID19 pandemic is an external threat to the provision of surgical services with graduated levels of severity depending on the number of patients infected with the coronavirus, human resources, intensive care unit beds, ventilators, and other valuable, but limited, resources. As hospital capacity decreases as a result of the pandemic, non-pandemic-related surgical activity will decline accordingly, hopefully returning to normal activity once it subsides. Similar to DEFCON, the Surgical Activity Condition (SURGCON) describes five graduated

levels of surgical activity ranging from SURGCON 5 (normal practice, evidence-based surgical activity) to 1 (no surgical activity). The intermediate levels of SURGCON include increasingly strict limitations on booked, or elective, surgical activity (levels 4 and 3) and cessation of booked activity altogether with preservation of emergency surgery (level 2). SURGCON 1 describes the most severe reduction in surgical activity when all surgical activity, elective and emergent, ceases. These levels are described in the [Table](#).

The SURGCON system is relevant to all surgical specialties and considers local differences in pandemic surges and resource restrictions. The practice of Vascular Surgery is used as an example in the Table (Vascular Activity Condition or VASCCON). In VASCCON 5, the treatment of abdominal aortic aneurysm (AAA), carotid artery stenosis, and peripheral arterial disease is directed by evidence-based clinical practice guidelines while considering patient preferences. This is standard practice in usual times. With a surge in COVID19 patients, elective surgical activity is limited in a stepwise fashion to patients most at risk of life or limb loss when therapy is delayed. In VASCCON 4, elective activity is restricted to larger AAAs (higher risk of rupture), symptomatic carotid artery stenosis (higher risk of stroke), and severe peripheral arterial disease or chronic limb-threatening ischemia. The transition to VASCCON 3 involves further restrictions of elective activity and the preference for treatment strategies that offer fewer complications, use less intensive care resources, and lead to shorter hospitalizations (examples include endovascular repair for AAA and percutaneous interventions for chronic limb-threatening ischemia). With further surges in pandemic patients, all elective surgical activity would cease with VASCCON 2 and vascular surgery interventions would be limited to life- and limb-threatening emergencies (repair of ruptured AAA and interventions for acute limb ischemia). VASCCON 1 represents the untenable situation when the pandemic overwhelms hospital capabilities and ALL surgical activity ceases and patients with acute surgical emergencies (ie, ruptured AAA) are offered palliation. It is hoped that early adoption of graduated restrictions in activity will prevent this scenario from happening.

Although Vascular Surgery is used as an example, this system is applicable to all surgical specialties where a graduated hierarchy of patient groups reflecting the

From the Division of Vascular Surgery, Peter Munk Cardiac Centre & University Health Network, University of Toronto.

Author conflict of interest: none.

Correspondence: Thomas L. Forbes, MD, Toronto General Hospital, 200 Elizabeth St, EN 6-222, Toronto, Ontario M5G2C4, Canada (e-mail: thomas.forbes@uhn.ca).

The editors and reviewers of this article have no relevant financial relationships to disclose per the JVS policy that requires reviewers to decline review of any manuscript for which they may have a conflict of interest.

J Vasc Surg 2020;72:391-2

0741-5214

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Table. Types of surgical activities and levels of Surgical Activity Condition (*SURGCON*) and Vascular Surgery Activity Condition (*VASCCON*)

<i>SURGCON</i> level	Type of surgical activity	<i>VASCCON</i>
5	Evidence-based surgical practice	Clinical practice guideline directed care of AAA, CAS, PAD
4	Limitations on nonemergency surgery	Booked cases limited to AAA >6 cm, symptomatic CAS, CLTI
3	Severe limitations on nonemergency surgery	Booked cases limited to AAA >8 cm, symptomatic CAS, severe CLTI
2	Emergency surgery only	No booked cases, emergency cases include ruptured AAA, acute limb ischemia
1	No surgical activity	No emergency or booked surgery (patients with ruptured AAA are palliated)

AAA, Abdominal aortic aneurysm; CAS, carotid artery stenosis; CLTI, chronic limb-threatening ischemia; PAD, peripheral artery disease.

risk of delay of elective surgery can be determined, whether it be cancer surgery, cardiac surgery, or otherwise. It also offers a stepwise de-escalation of surgical restriction with an eventual return to normal activity as the pandemic resolves and permits regular transitions from one level to another through the inevitable increases and decreases of available resources during a pandemic.

We are entering uncommon times with the COVID19 pandemic, and a common language describing surgical

activity is necessary, especially one that reflects local differences and the rapidly changing landscape that a pandemic offers. There are undoubtedly other reporting systems, but the *SURGCON* system offers the necessary simplicity, flexibility, and versatility that these times require.

Submitted Apr 2, 2020; accepted Apr 22, 2020.