

# A proposal for the curriculum and evaluation for training rural family physicians in enhanced surgical skills

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## SUMMARY

Rural western Canada relies heavily on family physicians with enhanced surgical skills (ESS) for surgical services. The recent decision by the College of Family Physicians of Canada (CFPC) to recognize ESS as a “community of practice” section offers a potential home akin to family practice anesthesia and emergency medicine. To our knowledge, however, a skill set for ESS in Canada has never been described formally. In this paper the Curriculum Committee of the National ESS Working Group proposes a generic curriculum for the training and evaluation of the ESS skill set.

The precipitous attrition of small volume surgical programs in rural Canada over the past 2 decades has led to the need for rural Canadians to travel for even the most basic procedural care.<sup>1</sup> The linkages between sustainable rural maternity care and the presence of robust local surgical programs drive the need for a solution to sustain local surgical services beyond the intrinsic value they offer.<sup>2-4</sup> The local benefits to these surgical programs include ensuring appropriate equity of access to health care services; increased community capacity to recruit and retain family physicians and other health care providers in rural settings; maintaining a high level of community health care competence, particularly in regards to critical care and emergency services; and providing the context for rural education and research. At a community level this translates into securing the availability of a surgical first responder trained to handle a variety of scenarios, such as trauma, that require immediate intervention. The obligation to travel for care is a substantial barrier to equitable access for rural Canadians. In western Canada, rural family physicians trained in enhanced surgical skills (ESS) working alongside general surgeons and other specialists underpin this essential health care infrastructure.<sup>5,6</sup>

Presently, there is 1 accredited 12-month postgraduate training program for family physicians to acquire ESS training. The University of Saskatchewan accepts 2 trainees per year at its Prince Albert site. The University of Alberta appears poised to start a similar program at its Grande Prairie site.

The National Working Group on ESS represents a large number of volunteers drawn from the shallow pool of those experienced and active in ESS training programs and practice in British Columbia, Alberta and Saskatchewan, along with interested national partners (<http://ess.rccbc.ca/fifth-page/>). This article has been crafted by our Curriculum Committee. Our goal has been to describe a generic training and evaluation program for ESS rural family physicians suitable for introduction at any of Canada’s medical schools. To our knowledge, this has never been done. With the recent recognition by the College of Family Physicians of Canada (CFPC) of ESS as a community of practice (CoP) section, there is a potential pathway to a certificate of added competence for ESS. We believe that a curriculum and evaluation framework, such as the one we propose, is an essential platform in this pathway.<sup>1</sup>

### TRAINING: FOR WHOM, WHERE, AND TO DO WHAT?

In the year 2000 there were 150 ESS rural family physicians sustaining local surgical programs in rural communities in western and northern Canada.<sup>5</sup> Although the number of these programs has shrunk substantially (from 80 in 1995 to 55 in 2011), the number of ESS physicians has remained stable (140 in 2011; unpublished data, Society of Rural Physicians of Canada, 2011). There is some evidence that several of these smaller programs grew larger in volume, absorbing a workforce displaced from programs that closed.

The proposed curriculum comprises a set of competencies drawn from

- the historical skill sets in which ESS physicians have provided services,<sup>6-8</sup>
- the skill sets for which there is good research evidence on the outcomes and safety of appropriately trained ESS physicians performing these procedures on selected patients in facilities with suitable health and human resources,<sup>9-22</sup> and
- the present University of Saskatchewan R3 ESS training program.

Historically, training programs for ESS have recognized that acquired skills should be tailored to the needs and resources of the community where practice is intended. We support this opinion; however, we also appreciate that

- the integrity of ESS requires a core curriculum of defined competencies shared by all ESS graduates, not unlike the competencies acquired in any other medical or surgical discipline;
- the sustainability of rural small volume surgical programs requires a workforce with a generic portable skill set; and
- surgical skills deemed reasonable but outside the routine spectrum of ESS require additional training, evaluation and application for such privileges.

### CURRICULUM

The curriculum is based on 23 integrated modules, with each module representing a clinical presentation that might be referred to a rural family physician with ESS training. Each of these modules documents the knowledge and the diagnostic, management and procedural skills required for each clinical presentation. Evaluation includes documenting the minimum volume of clinical exposure (milestones) for that module. The 23 modules fall under 5 broad categories as follows.

#### *Basic operative management*

- 1) Surgery 101: antisepsis, hemostasis, incisions, stabilization, wound healing, suturing and instruments, physiologic reaction to surgery, nutrition

- 2) Patient selection and preparation: surgical and anesthetic
- 3) Surgical decision-making: crew resource management/operating room (OR) decision-making, patient transfer decision and management, triage

#### *Management of abdominal presentation in the nonpregnant patient in rural and remote settings*

- 4) Abdominal wall mass or pain: herniorrhaphy
- 5) Acute right lower quadrant pain: appendicitis/appendectomy, adnexal/ovarian disease
- 6) Gastrointestinal (GI) bleeding (upper and lower)
- 7) GI screening and surveillance (upper and lower)
- 8) Perianal presentations: hemorrhoids, infections, warts

#### *Management of pregnancy in rural and remote settings*

- 9) Complications of labour and delivery: operative vaginal delivery, cesarean section, perineal trauma, uterine inversion, postpartum hemorrhage, retained placenta, advanced labour and risk management (ALARM), neonatal resuscitation program (NRP)
- 10) First trimester pain and bleeding: dilation and curettage, ectopic pregnancy

#### *Management of nonabdominal presentations in rural and remote settings*

- 11) Integumentary lesions: skin, nails, subcutaneous lesions, ganglia, lipoma, small flaps, skin grafting, digital amputation
- 12) Fertility: vasectomy, tubal ligation, essure
- 13) Genitourinary disease: acute testicular/scrotal disease, phimosis, circumcision, urethral dilation
- 14) Nonpregnant uterine bleeding: dilation and curettage, hysteroscopy
- 15) Tonsillar disease: tonsillectomy, adenoidectomy
- 16) Hand: carpal tunnel release, hand trauma/infection, extensor tendon repair, compartment syndrome
- 17) Other elective procedures

#### *Basic principles*

- 18) Laparoscopy principles and skills
- 19) Endoscopy principles and skills
- 20) Laparotomy principles and skills
- 21) Procedural sedation principles and skills
- 22) Emergency ultrasound principles and skills: emergency department echo (EDE), emergency department targeted ultrasound (EDTU), focused assessment with ultrasound in trauma (FAST)
- 23) Hysteroscopy principles and skills

## EVALUATION

While it is anticipated that there will be some variation in the evaluative process between different ESS programs, there are substantive core principles that belong in all such programs.

- Evaluation is continuous and comprehensive and is embedded in each independent clinical encounter shared by a resident and preceptor, including all consultations and procedures. The evaluation should include the outcomes whether or not the encounter led to a surgical procedure.
- Evaluation should be measured as objectively as possible using something similar to an Objective Structured Assessment of Technical Skills (OSATS) form for technical skills and something equivalent that is appropriate for measuring the knowledge, diagnostic and management skills embedded in each ESS consultation.
- Evaluation should also include assessment that comes from a source external to the local training program.

### Internal

The evaluation of an ESS resident's knowledge and skills as well as their progress within each of the clinical modules has 2 parallel tracks.

- Volume of clinical exposure: within each module, there are milestones for the volume of both consultations and procedures. Success in each module requires that these milestones be attained.
- Verification of competency: some measurement tool for competency will be completed for each independent clinical encounter shared between a resident and a preceptor. Final success in each module requires sign-off by 2 preceptors on both the consultations and the procedures applicable to that module, verifying the resident's suitability for independent practice.

### External

The credibility of the internal evaluation process and the portability of its certificate of completion will be substantially larger with an external examination process. Equally important, the comfort felt by the preceptors who sign off on competence will be supported by the knowledge that the learner will be scrutinized in an external examination process. This external examination process ideally would include both an oral and written component.

- Oral: an examination committee that includes an ESS physician, an obstetrician–gynecologist and a general surgeon from outside the program would meet, either in person or remotely by video conference, and examine an ESS resident using clinical scenarios taken from their log book and ESS curriculum. Each examiner

would obtain assessment scores using the same measurement tool used for scoring the ESS consultations. A sign-off would be required from 2 of the 3 examiners for success on this exam.

- Written: the ESS residents writing the Principles of Surgery examination, which is taken each spring by second-year specialty surgical residents in Canada, would be helpful assessment for topics not covered in clinical evaluations during rotations or oral exams.

## CONCLUSION

The availability of safe, high-quality rural surgical services requires educational programs for the training, evaluation, and certification of rural family physicians with ESS. The sustainability of a mobile ESS workforce with a certified portable skill set will be enhanced by a pathway to a Certificate of Added Competence in ESS from the CFPC, which they have now endorsed.<sup>23</sup> We offer this proposal for the curriculum and evaluation of ESS training as a pillar to be considered in that evolution. The next step would be engagement with specialist partners whose expertise and mentorship are required to use this proposed platform to train ESS physicians with fellow ESS physicians.

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## References

1. Pong RW, Pitblado JR. Geographic distribution of physicians in Canada: beyond how many and where. Ottawa: Canadian Institute for Health Research (CIHR); 2005.
2. Kornelsen JA, Grzybowski SW. Obstetric services in small rural communities: What are the risks to care providers? *Rural Remote Health* 2008;8:943.
3. Kornelsen J, Grzybowski S. Cultures of risk and their influence on birth in rural British Columbia. *BMC Fam Pract* 2012;13:108.
4. Kornelsen J, Grzybowski S, Iglesias S. Is rural maternity care sustainable without general practitioner surgeons? *Can J Rural Med* 2006;11:218-20.
5. Iglesias S, Jones L. Rural surgical programs in Western Canada. *Can J Rural Med* 2002;7:103.
6. Chaisson PM, Roy P. Role of the general practitioner in the delivery of surgical and anaesthesia services in rural western Canada. *CMAJ* 1995; 153:1447-52.

7. Humber N, Frecker T. Delivery models of rural surgical services in British Columbia (1996-2005): Are general practitioner-surgeons still part of the picture? *Can J Surg* 2008;51:173-8.
8. Humber N, Frecker T. Rural surgery in British Columbia: Is there anyone out there? *Can J Surg* 2008;51:179-84.
9. Society of Rural Physicians of Canada, Society of Obstetricians and Gynecologists of Canada, & College of Family Physicians of Canada. Joint position paper on training for rural family practitioners in advanced maternity care skills including cesarean section. *Can Fam Physician* 1999;45:2416-22.
10. Deutchman M, Conner P, Gobo R, et al. Outcomes of cesarean sections performed by family physicians and training they received; a 15 year retrospective study. *J Am Board Fam Med* 1995;8:81-90.
11. Kriebel SH, Pitts JD. Obstetric outcomes in rural family practice: an 8 year experience. *J Fam Pract* 1988;27:377-84.
12. Cameron B, Cameron S. Outcomes in rural obstetrics, Atherton Hospital 1981-90. *Aust J Rural Health* 2001;9:S39-42.
13. Black DP, Fyfe IM. The safety of obstetric services in northern Ontario. *Can Med Assoc J* 1984;130:571-6.
14. British Columbia Reproductive Care Program. Report on the findings of a consensus conference on obstetrical services in rural and remote communities. *Can J Rural Med* 2000;5:221-217.
15. Iglesias S, Saunders LD, Tracy N, et al. Appendectomies in rural hospitals: safe whether performed by specialist or GP surgeons. *Can Fam Physician* 2003;49:328-33.
16. Caron NR, Lewis-Watts DA, Weber EM. The provision of emergency surgical services in isolated communities. *JCC* 1998;41:8.
17. Rodney WM, Hocutt JE Jr, Coleman WH, et al. Esophagogastro-duodenoscopy by family physicians: a national multisite study of 717 procedures. *J Am Board Fam Pract* 1990;3:73-9.
18. Harper MB, Pope JB, Mayeaux EJ Jr, et al. Colonoscopy experience at a family practice residency: a comparison to gastroenterology and general surgery services. *Fam Med* 1997;29:575-9.
19. Kirby E. Colonoscopy procedures at a small rural hospital. *Can J Rural Med* 2004;9:89-93.
20. Rodney WM, Debon G, Cronin C. Evolving colonoscopy skills in a rural family practice: the first 293 cases. *Fam Pract Res J* 1993;13:43-52.
21. Pierzchajlo RP, Ackerman RJ, Vogel RL. Colonoscopy by a family physician: a case series of 751 procedures. *J Fam Pract* 1997;44:473-80.
22. Hopper W, Kyker KA, Rodney WM. Colonoscopy by a family physician: a 9 year experience of 1048 procedures. *J Fam Pract* 1996;44:561-6.
23. Lemire F. Calibrating. *Can Fam Physician* 2015;61(7):648.

The detailed curriculum proposal is available at <http://rccbc.ca/wp-content/uploads/2014/10/Draft-2-Enhanced-Surgical-Skills-Curriculum-14-01-21.pdf>

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