

Use of POCUS for earlier diagnosis of aortic dissection

As a rural generalist physician working in a rural emergency department I was interested to read the case report in the January issue of *Canadian Family Physician* of a life saved by the excellent and timely work of the whole rural health care team and community.¹

It struck me while reading, however, that the use of point-of-care ultrasound (POCUS) would have substantially shortened the time to diagnosis and reduced the risk of a poor outcome. My hospital does not have a computed tomography scanner and the nearest is a 1.5-hour drive. Our nearest tertiary care centre is 2 hours in the opposite direction.

With physician training and access to POCUS this dissection could have been diagnosed at the bedside as soon as suspected without the need for laboratory results, etc, or the delay to get the computed tomography scan arranged.

My comments are not to diminish the amazing work of this team but simply to advocate for the use of POCUS more widely and most importantly in rural, low-resource settings.

Point-of-care ultrasound was not something that was part of my training 20 years ago but it is now becoming a more important part of emergency department and hospital care, as well as physician office care. Seeing the promise of huge gains and improved outcomes in my rural community I have recently embarked on a 1-year virtual fellowship in POCUS, which I am able to complete without taking time away from work in my community or from family. I hope that the integration of POCUS into all rural health care settings will be something that is supported by all groups and funding organizations in the future.

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Competing interests
None declared

Reference

1. Klein MC, Oremakinde A, Wong DR. Aortic dissection. A story of rural assessment, evacuation, and survival. *Can Fam Physician* 2024;70:25-9.

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Complex, responsive primary care

I was heartened to read the introductory article on complexity theory as applied to family medicine written by Dr Sarah Fraser and titled “Family medicine is complex medicine.”¹ Dr Fraser is indeed wise to have raised what we as members of this specialty, along with those of us who specialize in quality improvement, have long known about the vast and intricate aspects inherent to the practice of family medicine.

The conceptualization of patient health can never be that of a static snapshot in time. The approach of the astute family physician must thus be one grounded in an ability to see the weblike continuous dynamic interplay between the biological, psychosocial, and sociologic dimensions of not only the patient’s life but the lives of

all other care providers and social microcosm partners in the patients’ health journey. To pull on one strand of such a web (in order to effect positive health change) portends shifts not only in the immediately adjacent strands but in the entirety of the web itself.

Nowhere is the application of complexity theory in medicine more evident than in the example found in the Foresight obesity systems map.² This growing recognition of the impact of complexity theory as it applies to human health has been slow to blossom in the “collective consciousness” of the medical field. However, budding aspects have been seen of late in the form of the expansion of the initial conceptualization of the Triple Aim health care (initially touted by Dr Donald Berwick and colleagues and centring around improving population health, improving patient experience, and reducing costs).³ We have rapidly progressed through the Quadruple Aim, which includes the life and health of the providers, to the Quintuple Aim, which has a focus on health equity, and of late, to the Sextuple Aim, with a lens on environmental sustainability.³⁻⁶

Instead of adding further “aims” ad nauseam and engaging in the soup du jour of social prescribing, as a profession we would be far better advantaged by tackling an ever finer grain of contributing factors to patient and system health from the perspective of the complex adaptive system framework, with a particular focus on the human interaction elements captured under the lens of complex responsive processes.⁷ Empowered by the analytic capabilities of artificial intelligence and specifically large language models, we can more readily map complex systems and model the outcomes of even small shifts in such systems.⁸

Further still, such large language models have a ready application not only in assisting family physicians in the elucidation of intervention effects in complex systems but also training and assisting future family physicians in real-time patient care.⁹ Ultimately, complexity theory offers us an astounding view of the informational richness resulting from the interplay among patients, providers, and social milieus. It also unveils a multifarious set of new levers that we can employ to reduce allostatic loads and optimize the health of all (patient, providers, systems, and society).^{10,11} Through the intersections of electronic medical records, artificial intelligence, and the connectivity of “smart devices” we have an opportunity to leverage technical solutions through a human systems lens in the delivery of complex, responsive primary care.

In the age of austere budgets, exhausted providers, and the ever burgeoning health and social needs of steadily increasing populations, creative application of complexity theory (as outlined above) may be one of the keys to the restoration of the balance of the health system, so long as we are cognizant of the words of Dr Thomas Sowell: “There are no solutions, only trade-offs.”¹²

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Competing interests

None declared

References

1. Fraser S. Family medicine is complexity medicine [Editorial]. *Can Fam Physician* 2024;70:7 (Eng), 8 (Fr).
2. Butland B, Jebb S, Kopelman P, McPherson K, Thomas S, Mardell J, et al. *Foresight. Tackling obesity: future choices – project report*. 2nd ed. London, UK: Government Office for Science; 2007. Available from: <https://assets.publishing.service.gov.uk/media/5a759da7e5274a4368298a4f/07-1184x-tackling-obesity-future-choices-report.pdf>. Accessed 2024 Feb 23.
3. Berwick DM, Nolan TW, Whittington J. The Triple Aim: care, health, and cost. *Health Aff (Millwood)* 2008;27(3):759-69.
4. Bodenheimer T, Sinsky C. From Triple to Quadruple Aim: care of the patient requires care of the provider. *Ann Fam Med* 2014;12(6):573-6.
5. Itchhaporia D. The evolution of the Quintuple Aim: health equity, health outcomes, and the economy. *J Am Coll Cardiol* 2021;78(22):2262-4.
6. Alami H, Lehoux P, Miller FA, Shaw SE, Fortin JP. An urgent call for the environmental sustainability of health systems: a 'sextuple aim' to care for patients, costs, providers, population equity and the planet. *Int J Health Plann Manage* 2023;38(2):289-95. Epub 2023 Feb 3.
7. Stacey R. *Tools and techniques of leadership and management. Meeting the challenge of complexity*. Abingdon, UK: Routledge; 2012.
8. Combemale B, Gray J, Rumpe B. Large language models as an "operating" system for software and systems modeling [editorial]. *Softw Syst Model* 2023;22(5):1391-2.
9. Clusmann J, Kolbinger FR, Muti HS, Carrero ZI, Eckardt JN, Laleh NG, et al. The future landscape of large language models in medicine. *Commun Med (Lond)* 2023;3(1):141.
10. Guidi J, Lucente M, Sonino N, Fava GA. Allostatic load and its impact on health: a systematic review. *Psychother Psychosom* 2021;90(1):11-27. Epub 2020 Aug 14.
11. McEwen BS, Stellar E. Stress and the individual. Mechanisms leading to disease. *Arch Intern Med* 1993;153(18):2093-101.
12. Sowell T. *A conflict of visions. Ideological origins of political struggles*. Revised ed. New York, NY: Basic Books; 2007.

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