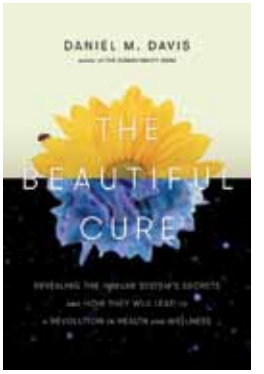
Book review: *The Beautiful Cure: Revealing the Immune System's Secrets and How They Will Lead to a Revolution in Health and Wellness*

By Daniel M. Davis. Doubleday Canada, 2018. ISBN-10: 0385686765. Hardcover, 272 pages.

During medical school, and forever after, I found immunology to be the medical subject that was hardest to understand. Apart from the arcane processes we had to learn about and the colorless and confusing terminology, there were bigger questions that even immunologists could not explain—such as how does the immune system know which foreign material it should attack (e.g., bacteria and viruses) and which it should leave alone (e.g., food and placental tissue)? Then along came AIDS, and we were even more confused. Over time, I developed a working concept of the larger immune processes and welcomed wholeheartedly the introduction of immune therapies for multiple conditions, but deep down I knew that I was faking my understanding.

I leapt at the chance to read this book because such luminaries as Bill Bryson and Stephen Fry reviewed it in glowing terms. If a nonphysician has described the book as "eye-opening," I thought that surely it would open my eyes too. And it did, kind of—I have a better understanding of some immune processes, but I would still have difficulty explaining much of this to others. I don't think it's the author's fault, because he has an engaging writing style. He describes major breakthroughs using multiple anecdotes, and his storytelling holds the reader's attention. But at the end, sadly, I remained not as informed as I hoped to be. In his epilogue, the author seems to acknowledge the book's limitations: "Someday we may find a grand unified theory of the immune system, a few principles that capture precisely how it all works, but that dream may never work out. And it might even be the wrong thing to aim for." When a professor of immunology says something like that, it's no wonder that so many of us remain confused and intimidated by the subject.



Having said that, however, I'm keeping the book, and I plan to read it again. Maybe this first exposure just triggered a primary response.

—TCR

J.H. MacDermot writing award winners

The 2017 J.H. MacDermot Prize for Excellence in Medical Journalism: Best article or essay was awarded to Drs Justin Burton, Emma Dowds, and Alexander Dodd for their article, "First aid training for seniors: Preventing falls and medical morbidity in the elderly" [*BCMJ* 2017;59:189-191].

The authors wrote the article while in their third year of medical school at UBC in the Vancouver Fraser Medical Program. Dr Burton's interests include primary care medicine and collaboration between physicians, first responders, and the community. Dr Dowds plans to pursue a career as a rural GP. Prior to attending medical school, she worked and studied in the field of Alzheimer disease and dementia. Dr Dodd previously completed a bachelor's degree in biological psychology at UBC and, prior to attending medical school, taught first aid with the British Red Cross. They all hope to continue writing for the *BCMJ* as they transition into residency.

BC medical students are encouraged to submit full-length scientific articles and essays for publication consideration. Each year the *BCMJ* awards a prize of $1000 for the best article or essay written by a medical student in the province of BC. For more information about the award, visit www.bcmj.org/submit-article-award.

From left to right, Drs Alexander Dodd, Emma Dowds, and Justin Burton at the UBC MD graduation on 23 May 2018.

Doctors of BC 2018 annual general meeting

Doctors of BC members attended the 2018 annual general meeting on 2 June 2018 at the Robert H. Lee Alumni Centre on the UBC campus. The day started with the SGP AGM, followed by the Doctors of BC AGM with an address by the CMA past president, Dr Granger Avery. The evening's events commenced with a reception, followed by the Doctors of BC annual awards ceremony, including installation of officers, and the annual dinner and dance, with an address by President Dr Eric Cadesky, who talked about his plans for the coming year: "Practice is changing and the old lines that we have drawn to create identities no longer hold," he said. "When we think about GPs and specialists, when we look at our emergency rooms and our operating rooms and our case rooms, we see doctors working shoulder to shoulder whether they be Royal College certified or members of the College of Family Physicians. They are working to the same end." For award winners, and photos from the day, visit www.doctorsofbc.ca.

New Rapid Access Spine Triage Program at VGH

The Rapid Access Spine Triage Program at the Brenda and David McLean Integrated Spine Clinic is a new service for patients with non-emergent spinal complaints. Working with medical practitioners and spine surgeons, senior advanced practice physiotherapists with spine-specific advanced training conduct clinical assessments and triage patients who need to see a surgeon. Referring physicians receive a detailed report, and patients requiring a surgical consultation are booked on an expedited basis. To refer a patient, use the referral form found at: www.vch.ca/Documents/Blusson-Spine-Centre-Referral-Form.pdf.

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Doctors of BC Scholarship winners

Each year Doctors of BC presents two scholarships to children of Doctors of BC members who display outstanding scholastic achievement, remarkable volunteer contributions, and well-rounded extracurricular interests. Each recipient receives $1000 toward postsecondary education. Winners are selected by Doctors of BC committee members through an anonymous process.

This year's winners were selected from a group of applicants who all possessed a well-balanced list of academic, extracurricular, and volunteer achievements.

Anneke Dresselhuis, New Westminster

Ms Anneke Dresselhuis graduated from Carver Christian High School in 2018 and will be starting the University of British Columbia's dual degree program in the fall to pursue a Bachelor of Fine Arts and simultaneously a master's in Management through the Sauder School of Business. Anneke is passionate about making art, but acknowledges that the practical ability to promote and market her work is of equal importance.

Throughout high school Anneke maintained high academic standing, served on student council from grades 8 through 12 in various roles, and volunteered as a peer mediator (a student counselor assisting younger students who need emotional and social support to work through conflict) at her school. To view a portfolio of Anneke's artwork, visit http://adresselhuis.wixsite.com/arts.

John-Paul Ng, Vancouver

Mr John-Paul Ng graduated from Vancouver College in 2018 and will be attending the University of British Columbia in the fall in the Faculty of Science, with the aim of continuing on to medical school to be able to serve the physical and mental health needs of members of his community.

John-Paul maintained a high academic standing throughout high school, and has studied the Kodaly Method of piano since age 4. He remains a loyal student of the Vancouver Academy of Music 14 years later and is now preparing for the ARCT piano performer's diploma and grade 10 cello exam. John-Paul also started practising karate at age 7, and travelled to Japan this past summer to attend the 11th International Tai Kai Competition. He qualified for his first-degree black belt in 2017. Throughout childhood John-Paul also attended UBC physics and astronomy summer camps unfailingly, and started to volunteer at the camps as soon as he met the age requirement.

For more information about the award, visit www.doctorsofbc.ca/resource-centre/awards-scholarships/doctors-bc-scholarship-awards.

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Breathing easier from home: Home health monitoring at Island Health

With an aging population and a rising prevalence of chronic disease, health authorities are looking outside the box to leverage technology and existing clinical resources to provide additional care options for patients. Island Health's Home Health Monitoring (HHM) solution is a form of remote patient monitoring currently offered for Island Health patients with heart failure or COPD. Patients can be referred through a physician, nurse, family member, or they can self-refer. Once enrolled, patients receive a tablet, blood pressure cuff, oximeter, and weight scale to use in their home. Patients are taught how to use the technology, are provided with an education session on their conditions, and have their care plan explained. The patient completes a quick questionnaire on the tablet every morning designed to assess their current state and teach the patient about their condition. The nurse monitors results Monday to Friday, works with the patient to review results, provides ongoing education and self-management coaching, and shares pertinent information with the patient's physician and other care team members. HHM does not replace physician care; instead, it gives patients the opportunity to learn about their condition, how to self-monitor, and how to self-manage to limit exacerbations and improve quality of life.

A recent evaluation of the service used mixed methods to assess the impact of HHM on health care quality, access, and productivity. Program use, acute care use, and stakeholder feedback were analyzed. A total of 291 patients who previously participated in HHM were assessed for acute care use based on admittances specific to their monitored condition 90 days pre-HHM versus 90 days post-HHM.

Key findings

Use of HHM resulted in:

- An 81% reduction in emergency department visits.
- A 92% reduction in inpatient admissions.
- A 94% reduction in total length of stay.

Despite these positive results, an analysis of the program use found that only 4% of heart failure and COPD acute care admissions in Island Health were referred to HHM.

Previous HHM patients were invited to complete an anonymous survey. A total of 90% indicated that the equipment was easy to use, 92% indicated that they improved their knowledge of their condition, and 93% indicated satisfaction with the program (n = 72). Key informants were also interviewed from the following stakeholder groups: physicians, HHM nurses, and hospital liaisons. Much of the feedback for program improvement is already underway, including expanding to more morbidities and increasing application functionality. Positive perspectives reported by the informants include that HHM is effective and that it enables patients to be proactive about their health.

The HHM program is expanding with support and feedback from a variety of stakeholders. A diabetes protocol was added in May 2018, along with increased application functionality. Future efforts will build awareness of the program's successes and seek referrals. The next phase of the program will be evaluated to assess whether the current benefits continue to be realized and to support continuous quality improvement.

—William Cunningham, MD, CCFP, CCFP (EM)
—Lisa Saffarek, RN, BScN
—Michelle Wright, BSc
—Jessica Sullivan, BA, MBA

BC physicians use clinical expertise to answer burning research questions

Twelve exceptional BC health professionals (including 10 physicians) have been funded in the Michael Smith Foundation for Health Research's (MSFHR) second Health Professional-Investigator (HP-I) competition. Each will receive funding to support research focused on answering questions derived from their practical experience and clinical expertise.

MSFHR's HP-I program is designed to develop BC's research talent and help decrease the gap between health research and its implementation by supporting health professionals who are actively involved in patient care to conduct and apply research relevant to health and/or the health system. The idea is that clinicians with an intimate understanding of patient care are supported to apply their clinical knowledge in a research setting to answer questions straight from the bedside.

Award recipients include physicians specializing in cancer, stroke, asthma, and HIV. Alongside their clinical roles, these awardees will conduct research intended to improve patient health outcomes—from testing a handheld breast cancer imaging tool to exploring how to identify which HIV patients are most likely to benefit from adherence support via text message.

This year, MSFHR is cofunding two HP-I awards, one with the Providence Health Care Research Institute, and one with the Vancouver Coastal Health Research Institute and VGH + UBC Hospital Foundation. Each award recipient will receive a salary contribution to help them protect time for research for up to 5 years or support research personnel directly associated with their work.

The complete list of award recipients and research projects is available at www.msfhr.org/2018-HPI-award-recipients.

Cigarette smoke directly damages muscles in the body

Components in cigarette smoke directly damage your muscles. New research, published in *The Journal of Physiology*, indicates that smoking decreases the number of small blood vessels that bring oxygen and nutrients to muscles in the legs.

Smoking limits a person's ability to exercise because it makes their muscles weaker, and it was widely believed this muscle weakness is because the lungs become inflamed and eventually destroyed by habitual smoking, thereby limiting activity and exercise. However, this study suggests that cigarette smoke directly damages muscles by reducing the number of blood vessels in leg muscles, thereby reducing the amount of oxygen and nutrients they can receive. This can impact metabolism and activity levels, both of which are risk factors for many chronic diseases, including COPD and diabetes.

The research was conducted by the University of California, San Diego, in conjunction with Universidade Federal do Rio de Janeiro and Kochi University. It involved exposing mice to smoke from tobacco cigarettes for 8 weeks, either by inhalation or by injecting them with a solution bubbled with smoke.

The study did not identify which of the approximately 4000 chemicals in cigarette smoke are responsible for this muscle damage. Further research will aim to identify the responsible chemicals and explain the process by which they reduce the number of blood vessels.

The article, "Cigarette smoke directly impairs skeletal muscle function through capillary regression and altered myofiber calcium kinetics in mice," is available at https://physoc.onlinelibrary.wiley.com/doi/abs/10.1113/JP275888 (log in required).