Letters of less than 300 words are welcomed provided they do not contain material that has been submitted or published elsewhere; they may be edited for clarity and length. Letters may be e-mailed to journal@doctorsofbc.ca, submitted online at bcmj.org/content/contribute, or sent through the post and must include your mailing address, telephone number, and e-mail address.

Re: Chronic-disease rates cut in half!

I commend Dr Ron Wilson for encouraging doctors to practise health promotion in his article "Chronic-disease rates cut in half!" [*BCMJ* 2016;58:101]. As much as medical practitioners give lip service to the idea of a healthy lifestyle, few seem to understand the degree to which much, if not most, of the chronic disease we see is not only preventable but reversible through diet and lifestyle changes.

He closes by stating, "Let's take every opportunity we have to remind patients of these risk factors and direct them to resources that will help them manage or prevent these chronic conditions."

I don't think Dr Wilson goes nearly far enough. Lifestyle of our patients is not a minor issue that we should just give lip service to if we have the time. It is probably the most important issue! We should not refer to dietitians, nurses, and web sites for more information. If we truly want to help our patients stay well or get well, we must take responsibility for learning how to manage lifestyle in our patients ourselves. Of course those of us who walk the walk successfully, through healthy habits, will be more authentic and effective when we talk the talk with our patients.

If you are too busy rushing from exam room to exam room putting out fires in the health of your patients and you think you don't have time for this, think again! Just like health care costs are never going to come down, we are never going to have any fewer fires to put out until we systematically start investing in the health education and lifestyle fine tuning of our patients. This is not a job for dietitians and nurses. Lifestyle is a critical issue for all our patients. Doctors are the most influential health care practitioners. Therefore, it is the doctor who needs to take responsibility for systematically influencing the well-being of every patient.

However, until we get serious about training medical students on how to do this in practice, I don't expect to see much change in the prevalence of chronic diseases in Canada any time soon. If Doctors of BC is interested in patients as much as doctors, they would establish a campaign to influence change at UBC to balance the medical school curriculum away

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from the 95% emphasis on disease care and focus more on true health care.

—Ron Cridland, MD
Kelowna

Author replies

I would like to thank Dr Cridland for his comments on my article, "Chronic Disease Rates Cut in Half!" Yes indeed, perhaps I did not go far enough. I do believe that doctors are the most influential health professionals in our patients' lives. To be effective we must walk the talk and be examples of what we tell our patients. However, I don't believe we can be effective in promoting chronic disease prevention on our own. First, being realistic, we don't have the time it takes to do motivational interviews with our patients. Second, there are others who are better trained than us at doing this important task. What we need to do is direct our patients to where they can get this help. The Strategic Health Alliance in Kamloops is an example of this. With a doctor's referral, patients can attend a 12-week program to help them make lifestyle changes that will assist in preventing or helping with their chronic disease.

On a somewhat encouraging note, I can report that nutrition and exercise are now themes in the UBC Faculty of Medicine's renewed curriculum. I hope this will begin to instruct the next generation of doctors in the importance of these lifestyle factors.

—Ron Wilson, MD
Athletics and Recreation Committee

Re: Where's Marcus Welby when you need him?

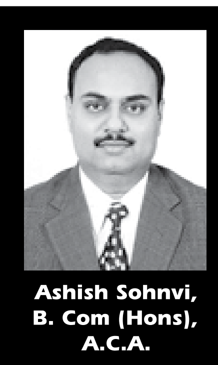
If we are going to agree that fictional Dr Marcus Welby is the best professional example for our students to emulate [*BCMJ* 2016;58:63-64], why not make the TV series a compulsory part of the med-school curriculum? But then again, maybe Marcus would only be suitable for those headed into family practice. Students destined for internal medicine specialties could watch *House*, the best-looking students could watch *Scrubs*, and any in military service would be well educated by a season or two of *M*A*S*H*. Here's to our doctors of the future!

—Sue McLoughlin, MD
Kelowna

Dr Nicolson's eulogy for Marcus Welby[1] completely misses the mark when it comes to understanding the complex reasons behind the overwhelming changes in practice patterns of modern-day family physicians. For obvious reasons comprehensive primary care will always remain the cornerstone of medicine in small rural settings, and physicians' professional societies and funders must continue to fully support rural family physicians by ensuring proper remuneration and practice support. Some of the ideas raised by Dr Nicolson may indeed help practitioners in such settings. However, for the 80% of Canadians who live in urban areas, [2] the model of comprehensive primary care has long gone the way of the dodo! Simply put, that model can no longer meet the needs of patients, physicians, and health care managers in a modern health system with unprecedented levels of complexity.

The decline of comprehensive family practice is not only due to a fee guide that promotes "high-volume low-intensity practice."[1] Changes in complex adaptive systems such as medicine are the result of a complex interplay of a multitude of reasons that, in turn, mutually affect each other in unpredictable ways.[3] Similarly, the progressive subspecialization of family medicine has been in the making for decades.[4] For example, in our previous research on drivers of the hospitalist model of care we discovered numerous patient-, provider-, and system-related factors.[5] Remuneration was only one of many reasons why many primary care providers moved away from hospital-based care. The effects of changing demographics within the new pool of family physicians, along with trends in societal expectations and values, are arguably more important factors than crude financial incentives. Indeed, the failure of programs (such as enhanced general practice fee codes for hospital care) to bring family physicians back into hospitals underscores the limited impact of financial incentives as a driver for changing practice patterns.

The nostalgia expressed by traditionalists is nothing more than a longing for a model of care delivery that is largely defunct. While no one disputes the dedication of doctors who committed their lives to comprehen-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sive primary care (often at great cost to their own well-being and to the detriment of their family relationships), there is little evidence that such a care model resulted in higher quality and safer care for patients. Indeed, numerous studies have consistently shown that, historically, patients received proper evidence-based care only about 50% of the time.[6,7] In fact, successful efforts to improve the quality and safety of care actively advocate for moving away from reliance on one individual's performance (no matter how knowledgeable or dedicated that person may be) to a team-based care model with ongoing performance measurement and refinement of care processes.

It is time for the primary-care establishment to embrace the fact that modern-day family physicians are able to use the knowledge and skills they learn during their comprehensive training to focus their practices in areas where they can be most effective, whether it is the care of patients with complex sets of chronic conditions in ambulatory care settings; providing episodic services to younger and less comorbid patients in walk-in clinics; or on areas such as hospital medicine, geriatrics, psychotherapy, or emergency medicine. Instead of proposing schemes to revitalize a model that no longer works in urban areas, efforts should be focused on developing structures for collaborative care models in which various physicians and other health care professionals can effectively look after patients (both on an individual and population basis) to deliver high-quality and safe care through co-management schemes.[8] Such systems should have strong integrated communication tools, comprehensive electronic medical records with the ability to generate meaningful performance reports to support ongoing quality improvement, and built-in processes to enhance patient and caregiver satisfaction. And, yes, these efforts must also be properly compensated!

—Vandad Yousefi, MD, CCFP, FHM
Vancouver

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Author replies

I would like to thank Dr Yousefi for his detailed response to my letter. We are in agreement that comprehensive primary care will always be the cornerstone of medicine. It would, however, be a mistake to underestimate the power of financial incentives in influencing behaviors, even in honorable professions. There is a 100% correlation between physician services that are deemed MSP negative (complex care, chronic disease, elderly care, facility-based care, etc.)

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and physician avoidance. GP subspecialization follows this pattern. I am unconvinced that high-volume low-intensity practice is a meaningful deployment of comprehensive medical training. The emerging subspecialty of Internet-facilitated prescription practice (high-volume low-intensity on steroids) worries me even more.

I have nothing against team-based care and medical care homes as outlined in the College of Family Physicians of Canada's excellent position paper, *A Vision for Canada: Family Practice: The Patient's Medical Home*, but would point out that this simply constitutes a modernized version of full-service general practice and, as such, is nothing new and unlikely to solve the growing imbalance between the escalating workload in primary health care and the dwindling human-resource base available to provide it.

"What has been will be again, what has been done will be done again; there is nothing new under the sun." –Ecclesiastes 1:9

—**Bruce Nicolson, MD**
100 Mile House

PROMs: The patient is the biggest variable

The article by Stanger and colleagues. on the use of patient-reported outcome measures (PROMs) in an orthopaedic surgeon's office [*BCMJ* 2016;58: 82-89] made an unsubstantiated leap from the article's findings to the applicability of PROMs. Mention was made of PROMs being used both in assessing appropriateness for surgery and in assisting clinicians in their self-assessment. Also, the claim that the use of PROMs could "contribute to a dramatic change in the way surgical care is provided in BC" was not furthered with examples of these dramatic changes, leaving the reader to speculate. As for the article's findings, since patient-perceived pain is a large component of both the PROMs and the objective scores used (in the Knee Society score up to 50% of the overall functional score), it is not too surprising that there is a correlation between them.

The biggest variable in any study that assesses the outcome of a treatment is often the patient. Gone are the days when patient cohorts can be assumed to be statistically comparable just because their age and sex distributions are similar. Patient factors including depression, pain catastrophizing, comorbidities, race, and socioeconomic status have all been shown to have significant impacts on both treatment outcomes and PROMs scores.[1-3] All these factors are now measurable and so should be taken into account before attempting to compare treatment outcomes in different patient populations. Following skeletal trauma, catastrophic thinking

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(as measured with use of the Pain Catastrophizing Scale) has been shown to be the sole significant predictor of pain at rest, pain during activity, and disability.[4]

In 2011 the outcome measures in rheumatoid arthritis clinical trials concluded against the use of PROMs as a discriminator for determining the need for total knee arthroplasty.[5] In similar fashion a further outcome study on the Oxford knee score (adopted in the UK by the National Health Service to measure the outcome of total knee replacement for audit and research purposes) concluded that patient variables would need to be acknowledged and the Oxford knee score adjusted to enable a fair comparison of differing study cohorts or orthopaedic units with dissimilar patient catchment populations.[1] PROMs instruments were designed to compare the effectiveness of forms of treatment, not as tools of diagnosis or indicators of success from interventions.[6] Nor are they a means of assessing patient satisfaction. A study of spine surgery patients showed that preoperative depression scores were indicative of patient dissatisfaction at 2 years after surgery, independent of improvements in pain or disability.[7]

While there may be merit to PROMs data collection as a means of individual practice reflection, their usefulness cannot be extrapolated to treatment or practice comparisons without rigorous patient population standardization.

—Roger Purnell, MB, FRCSC
Prince George

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Author replies

Thank you for the review of our article.

The PROMs used in the study correlated well with the clinical findings, both the Knee Society score and the Harris hip score, and while parts of those assessment tools are subjective there is a significant objective component, which allows some comfort that the two scoring mechanisms, subjective and objective, are measuring results accurately. This is the basis of the argument that the specific PROM test can be used on its own to assess outcomes.

The important issue that Dr Purnell discusses is that the PROM score on its own should not be used as an indication of the need for surgery, nor is it an indicator of patient satisfaction postoperatively. These points are correct. Decision for surgery is a clinical activity; a PROM at that stage is only an adjunct.

The concept of the minimal clinically important difference in PROMs scores is put forth as a way to see that the PROMs improvement actually indicates a significant improvement for the patient.[1]

The demonstration that the PROMs value before and after surgery reaches or exceeds the minimal clinically important difference would be de facto evidence of the success and appropriateness of the surgery. If this methodology was adopted in BC it would change the way surgical care is provided in the province to a more evidence-based approach. This type of accountability would be a dramatic departure from the status quo.

Dr Purnell points out that there are a multitude of factors that influence treatment outcomes and PROMs. Mention is made of posttraumatic conditions and back surgery. This article proposes using PROMs in elective nonemergency surgery, and it is acknowledged that assessing spinal surgery is more complex. This is not to say that standardized, formal postoperative evaluation should not be done.

Finally, the use of PROMs cannot be the only means of assessing outcomes; the surgeon's assessment of the patient must be part of the evaluation. It is noted that different populations may need different tools and, in fact, the Oxford group has now provided a North American electronic version of their scoring system.

—Michael Stanger, MCCM, FRCSC
Victoria

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Term limits for Doctors of BC committees

The contributions of the *BC Medical Journal* Editorial Board members are well respected. However, the current

Editorial Board is made up of senior, long-serving, eminent physicians who do not reflect the demographics of Doctors of BC members. There are no visible minorities on the Editorial Board, and the names of the current members, listed at the front of the journal, suggest they all have Western European ancestry.

Over the past few years, Doctors of BC instituted a policy where members of any Doctors of BC committee serve a 5-year term, after which they are invited to reapply for the position through the Doctors of BC Nominating Committee. At the same time, the Nominating Committee seeks applications from other Doctors of BC members for the position. This system was developed because it was recognized there was little turnover of members on some committees. The same committee members might serve for 10 or 20 years. The initiative has been successful in getting more Doctors of BC members involved in their association; however, for reasons that are unclear, the Editorial Board of the *BCMJ* has been excluded from this requirement.

Whereas the efforts of the current Editorial Board are greatly appreciated, the journal could become reinvigorated and more reflective of the opinions and diversity of the membership by encouraging turnover of Editorial Board members using the process described above. Please consider participating in this reform.

—John Sehmer, MD
Vancouver

The editor replies

Thank you for your interest in the *BCMJ* and for your kind words regarding the efforts of our Editorial Board.

The *BCMJ*'s terms of reference were reviewed and updated in 2015. To maintain editorial independence, which is an accepted standard for scientific publications, a case was made to the Governance Committee that the *BCMJ* Editorial Board should remain at arm's length from the Doctors of BC Board. After input and support from the Governance Committee, the current *BCMJ* terms of reference were put forward to and accepted by the Board of Doctors of BC.

We continue to review ways to maintain the journal's independence while reflecting the diversity of our readership, including lengths of service for Editorial Board members.

—Ed.

Re: GPAC guidelines: Stroke and atrial fibrillation

The new BC Guideline, Atrial Fibrillation—Diagnosis and Management (one of four new guidelines in the Stroke and Atrial Fibrillation series), states: "Patients for whom anticoagulation is recommended for stroke prevention, warfarin, or NOACs are available options. Existing evidence

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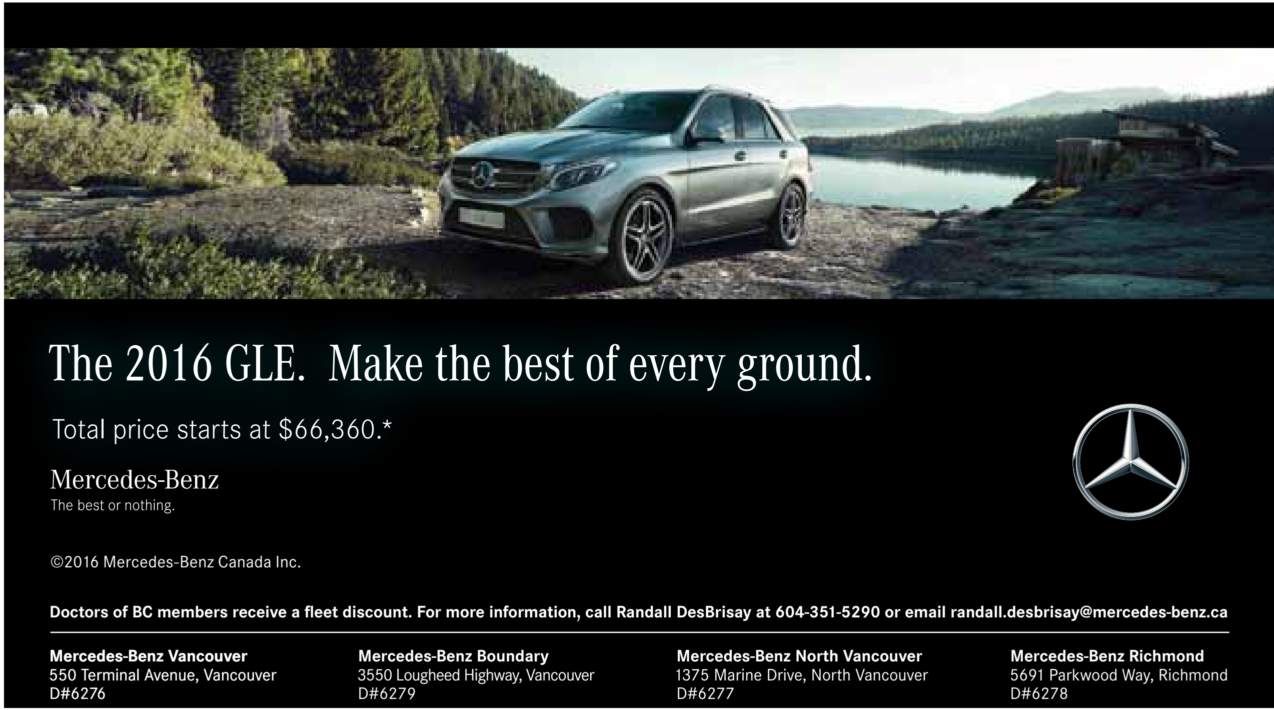

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does not provide a definitive ability to recommend one class of OAC over another."[1]

It should be remembered that the mean time in therapeutic range (TTR) in the warfarin arms of the industry-sponsored sentinel NOAC noninferiority trials was 60%, with a range of 55% to 64% (RE-LY 64% [dabigatran], Rocket-AF 55% [rivaroxaban], Aristotle 62% [apixaban]).[2-4]

But warfarin can be managed at a TTR > 75%. To understand what happens to adverse events at TTRs > 75%, see the **Table**, which references data from the warfarin arms of the SPORTIF III and SPORTIF V trials.[5]

Table. Reductions in adverse events by improving TTR from < 60% to > 75%.

Adverse event (per 100 patient years)	Poor control TTR < 60%	Good control TTR > 75%	Reduction in adverse events (%)
Stroke or systemic embolism	2.10	1.07	49%
Ischemic stroke	1.84	1.02	45%
Hemorrhagic stroke	0.20	0.06	70%
Systemic embolism	0.07	0.00	100%
M.I.	1.38	0.62	55%
Death, all causes	4.20	1.69	60%
Major bleeding	3.85	1.58	59%

In BC we do not employ the tools needed to achieve a TTR > 75%, simply because they are not funded by our BC health care system. So BC physicians, health care professionals, and patients do not have open access to these resources, including INR point-of-care testing, computerized warfarin-dosing software, and patient self-testing/self-management programs. This is very unfortunate for patients who are suffering unnecessary strokes and hemorrhages as a consequence. It is also very costly for our health care system.

If we adhere to the BC Guideline, as stated in the December 2015 issue of the *BCMJ* [2015;57:454-455], without changing our INR management system, our BC mean TTR will likely remain at the North American level of 54%.[6]

But there is a way to change this within our existing system by improving our lab-based warfarin management system. Consider the following process.

1. Patients attend the lab as usual.
2. The INR is performed using an INR point-of-care device.
3. The INR result is entered into a computerized warfarin-dosing system.
4. The software mathematically calculates:
   a. The dose of warfarin
   b. The TTR
   c. Date of next INR test
5. The lab personnel ask four safety questions, record the responses, and accept the warfarin dose if the INR is < 1.5 or > 4.0.
6. A warfarin-dosing calendar is printed and the patient goes home with the calendar after receiving an appointment for their next INR.
7. If the INR is < 1.5 or > 4.0 (i.e., critical lab value) or there is an adverse event, the physician is immediately called for appropriate treatment advice.
8. The INR, TTR, and warfarin dose are sent to the physician's EMR.

In this model, laboratory personnel:

- Are trained and certified on INR point-of-care testing and operation of the software.
- Are recertified annually.
- Work under the supervision of a clinical pathologist.
- Work within the constraints of a standardized medical directive and standard operating procedure from the referring physician and clinical pathologist.
- Are responsible for the quality control on all INR point-of-care testing/equipment and processes, which must meet provincial laboratory accreditation standards.

The software handles all within-range (1.5–4.0) INRs using the computer.[7]

The fee for a lab INR is $12.07 in BC. The cost of point-of-care testing test strips and software dosing is $7.00 per INR.

The expected TTR in this system is > 75%, based on the results of the CPAMS study,[8] in New Zealand, where pharmacists/pharmacy technicians (instead of lab personnel) performed INR point-of-care testing. Warfarin dosing was performed using a computer-assisted warfarin-dosing software program.

In Sweden patients attending an outpatient lab that used a similar lab-run system (personal communication with Dr Tomas Lindahl in Linköping, Sweden, January 2015) and a manual algorithm achieved a TTR > 80%.

In Sweden some patients have been taught to test their own INRs (patient self-testing) at the lab, saving the system the labor cost of testing (personal visit with Dr Peter Svensson in Malmö, Sweden, January 2015).

In Germany 200 000 patients tested their own INRs and dose warfarin using a manual algorithm (patient self-management), saving the system the cost of both testing and dosing. The German patient self-management program's TTR is > 80%.[9,10]

It is very possible to extend the lab model described above to include both patient self-testing and patient self-management models of care.

How well could patient self-management work in Canada? The best source of this information was

published in the December 2015 issue of *Thrombosis Research* by Mary Bauman, nurse practitioner, and her group at the Stollery Children's Hospital in Edmonton.[11] Their pediatric patient self-management program (KIDCLOT) was studied over 2.7 years. Children and their parents managed warfarin at home and entered INR results online on the program's computer software. There were 42 patients (average age: 6 years) in the study. The TTR was > 90%. There were no clots, no hemorrhages, and no dosing errors.

The bottom line

BC needs to upgrade its warfarin management system to achieve a mean provincial TTR > 75%. There are multiple models of improved warfarin management in other countries. The model described above is an example of a place to start in BC without the need to create new funding channels. It maintains a high level of quality control and does not require a major change in patient behavior. It is also amenable to expansion to both patient self-testing and patient self-management models. There are other models of care that will work equally well (pharmacist, nurse, nurse practitioner, physician-led models), subject to appropriate funding and training.

BC needs to provide patients with the option of warfarin patient self-management. If Alberta kids can do it, why can't we?

—Murray Trusler, MD, MBA, FCFP, FRRMS
VP, INR Online Canada Limited (Not for Profit)

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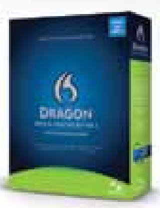

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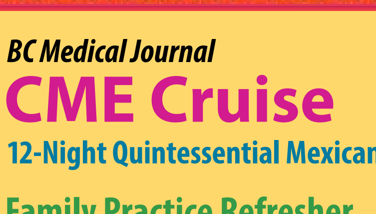

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