

## Frederick Banting and the opportunities of research by general practitioners

Iona Heath

**Competing interests:** None declared.

This article was solicited and has not been peer reviewed.

**Correspondence to:**

Iona Heath,  
iona.heath22@yahoo.co.uk

**CMAJ 2011. DOI:10.1503/cmaj.110023**

I wish I could have been in Banting's audience when he addressed the Canadian Medical Association in June 1926. I suspect that there would have been few women present, and I wonder what the audience made of the youthful speaker with his already extraordinarily distinguished resumé. The text of the lecture was published in the *Canadian Medical Association Journal* in August of the same year.

Born in November 1891, Frederick Grant Banting was only 34 years old at the time. Yet three years earlier, he had already become the youngest ever Nobel laureate in Medicine for his work in the discovery of insulin.<sup>1</sup> He had qualified as a doctor in 1916 and enrolled in the Canadian Army Medical Corps immediately afterward. He served in France, was wounded at the battle of Cambrai and, in 1919, was awarded the Military Cross for heroism under fire. On his return from the war, Banting worked as a general medical practitioner in London, Ontario, and studied both orthopedics and pharmacology before embarking on the research that would lead to his Nobel Prize.

In his lecture, Banting set out "to treat the subject of medical research from the standpoint of a general practitioner, in the hope that helpful suggestions may be given to all such who are here today." Much of what he went on to say remains relevant and helpful almost 85 years later. Paying tribute to the great general practitioner-researchers of history, including Harvey, Sydenham, Addison and MacKenzie, Banting noted that "they were invariably workers and thinkers and accurate observers."

That description brings to mind the crux of many of the problems facing researchers today. The bureaucratic constraints and imperatives of modern research have made it increasingly difficult to combine a career in research with sufficient clinical general practice to allow for this peculiarly productive combination of work, thought and observation. Banting asserted that the great general practice researchers "observed every sign and symptom of disease, and then by weight of clinical experience, made deductions and elaborated theories." He wonders whether "today ... we sometimes get lost in a maze of less important details and lose sight of the main issue." If that was already true in 1926, how much more so today, when the temptation is all but irresistible to identify associations within computer-analyzed data that are informed neither by clinical experience nor a plausible theory of causation?<sup>2</sup>

Banting emphasized the importance of meticulous medical record-keeping. "At the time that these records were made, they might not appear of value, but memory is variable and inaccurate, and the written record is useful not only for the present but for all time." The difficulty we face at the beginning of the twenty-first century in the United Kingdom, for example, is that we now have financial incentives and quality standards for medical record-keeping that dictate how records are kept. These are based on computer codes and on our existing understanding of the evidence of biomedical science. The problem is that such records leave little space for the unexpected observation that may provide the clue to future knowledge. And so, despite Banting's hopes, they may have no relevance for the future.

I am reminded of my favourite "Memorable patient" article from the *British Medical Journal*,<sup>3</sup> submitted in 1997 by a general practitioner who had been summarizing his patients' records and discovered the record of a memorable consultation from 10 years earlier. The patient had come for a repeat prescription of antibiotics for his acne rosacea and mentioned in passing that the antibiotics helped his indigestion. The doctor made a note: "Occ. indigestion. Says oxytet



### KEY POINTS

- Banting, a general practitioner at the time that he discovered insulin, recognized the value of combining research with clinical work to stimulate thought and observation.
- Although Banting emphasized the value of good medical records, today's computerized systems may stifle the seeds of new research ideas by making unusual observations hard to record.
- Banting's research on insulin relied on access to a laboratory. Very few general practitioners today would be able to test their own ideas in a laboratory.

[oxytetracycline] cures it!” Ten years later, he reflected that “the patient may seem peculiar, but he may be telling you something that is revolutionary. We ignore such things that do not fit into the standard view at our peril.” How many other doctors heard patients making similar remarks in the preceding years and did not record them, so passing up any possibility of beating Barry J. Marshall and J. Robin Warren to the discovery of *Helicobacter pylori* and the subsequent Nobel Prize for Medicine in 2005?

Already, in 1926, Banting was lamenting the increase in reliance on clinical tests, which he suspected were resulting in doctors “doing less thinking and making fewer observations.” We can only increase our knowledge if we doubt the extent of our existing knowledge, if we deliberately cultivate doubt — that subjective feeling of uncertainty that helps us to locate our ignorance. As Banting knew from his experience as a general practitioner, listening to patients’ stories can help us to keep doing the necessary thinking because stories have to do with gaps where new knowledge is to be found: they begin in the gap between a word and its object and explore the gap between what is and what might have been, between different truths and different meanings and they are a constantly available antidote to the all too prevalent false certainties of contemporary medicine.

Despite his protest that “even without laboratory assistance, medical research can be carried on, for its principles are the same inside and outside the laboratory,” Banting could not have made his discovery of insulin without access to laboratories. Since then, the distance between the general-practice consulting room and the physiology or biochemistry laboratory has continued to widen. Ordinary general practitioners, and even most general-practitioner academics, have no access to such facilities and no way of testing theories that might arise from their observations and experience.

Banting would argue that it is essential to attempt to close this abyss between basic medical science and ordinary clinical experience — especially the rich longitudinal experience that is too often available only to general practitioners. At the risk of exposing myself to justified ridicule, one of my personal theories is that menopausal symptoms provide a useful regular flushing of the cardiovascular system, and, as such, might partially explain the historically lower risk of heart disease among women generally<sup>4</sup> and the increased rate among those who take hormone replacement therapy<sup>5</sup> and suppress the flushing. I have no way of testing this theory, but perhaps someone could do it for me or tell me why I am wrong.

Today it is inconceivable, even laughable, that a young general practitioner returning from service in Afghanistan could embark on research resulting in a Nobel Prize. Why is that so, and how might Banting’s opportunities be made available again?

## References

1. *Frederick G. Banting — biography*. Stockholm (Sweden): The Nobel Foundation; 1923. Available: [http://nobelprize.org/nobel\\_prizes/medicine/laureates/1923/banting-bio.html](http://nobelprize.org/nobel_prizes/medicine/laureates/1923/banting-bio.html) (accessed 2011 Mar. 11).
2. Davey Smith GD, Phillips AN. Confounding in epidemiological studies: why “independent” effects may not be all they seem. *BMJ* 1992;305:757-9.
3. Roscoe T. A memorable patient: early treatment of H pylori. *BMJ* 1997;315.
4. Department of Health. *Health Survey for England 1998: cardiovascular disease*. London (UK): The Stationary Office, 1999. [www.archive.official-documents.co.uk/document/doh/survey98/hse-02.htm#2.3](http://www.archive.official-documents.co.uk/document/doh/survey98/hse-02.htm#2.3) (accessed 2011 Mar. 13).
5. Humphries KH, Gill S. Risks and benefits of hormone replacement therapy: the evidence speaks. *CMAJ* 2003; 168:1001-10.

**Affiliation:** Iona Heath is President of the Royal College of General Practitioners, United Kingdom.

**ALESSE**<sup>®</sup>

levonorgestrel 100 µg ethinyl estradiol 20 µg

Alesse (levonorgestrel 100 µg and ethinyl estradiol 20 µg tablets) is indicated for contraception control and the treatment of moderate acne vulgaris in women ≥14 years of age, who have no known contraindications to oral contraceptive therapy, desire contraception and have achieved menarche.

Alesse Product Monograph available upon request.



Working together for a healthier world™

©2011  
Pfizer Canada Inc.  
Kirkland, Quebec  
H9J 2M5

™Pfizer Inc, used under license  
Alesse® Wyeth LLC, owner  
Pfizer Canada Inc., Licensee

