

4. *Opin Obstet Gynecol* 2006;18(1 Suppl):235-288.
4. Mandelblatt JS, Lawrence WF, Gaffikin L, et al. Costs and benefits of different strategies to screen for cervical cancer in less developed countries. *J Natl Cancer Inst* 2002;94(19):1469-83.
5. Monsonego J. Cervical cancer prevention: the impact of HPV vaccination. *Gynecol Obstet Fertil* 2006;34(3):189-201.

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## Physician resistance to new information technology

The account by Liette Lapointe and Suzanne Rivard of the challenges of implementing electronic clinical information systems in hospitals<sup>1</sup> vividly reminded me of my own experience with such an undertaking 20 years ago.<sup>2</sup> Their report indicates, not surprisingly, that the success of an implementation is determined by the implementers' ability to cope with user expectations and hospital politics. In all 3 of their cases, the introduction of the module for order entry appears to have been the crucial challenge to ultimate success and was the step most likely to provoke physician resistance.

This finding demands further examination. The explicitness inherent in order-entry systems provides a degree of routine transparency and implied accountability to which physicians are not accustomed, and it can provoke physician resistance. I believe that the key to successful implementation lies not in trying to overpower this resistance but rather in circumventing it by exploiting a feature that meets with universal favour. The "problem list" might be such a feature, judging by its inclusion in virtually all of the electronic clinical information systems currently on the market, but presently it is an incidental or optional by-product with little apparent utility. This does not fit with Weed's original concept,<sup>3</sup> in which the problem list was to be the backbone of the patient record.

After more than 30 years of effort,

we are still far from having a health care system that is free from the crippling inefficiencies of paper records. A radical rethinking of implementation strategies for electronic clinical information systems is urgently needed.

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### REFERENCES

1. Lapointe L, Rivard S. Getting physicians to accept new information technology: insights from case studies. *CMAJ* 2006;174(11):1573-8.
2. Gryfe CI, Thompson M, Kimsto R, et al. A computerized problem-oriented health-care information system in a geropsychiatry service. In: *Proceedings of CATCH '87: Computer Applications to Canadian Health*; 1987 Mar 19-21; Toronto. Willowdale (ON): College of Family Physicians of Canada; 1987.
3. Weed LL. Medical records that guide and teach. *N Engl J Med* 1968;278:593-600,652-7.

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## Natriuretic peptides and heart failure

We read with interest the recent review by Michael Felker and colleagues,<sup>1</sup> in which they suggest that it may be problematic to attempt to use a common plasma reference level for B-type natriuretic peptide as an indicator of the level of functional heart failure because of the degree of interindividual variation. They suggest that B-type natriuretic peptide levels might vary not only according to age and renal function but also according to the stage of heart failure.

We agree with Felker and colleagues that the stage of heart failure influences plasma levels of B-type natriuretic peptide. For example, in the study by Maisel and colleagues cited by the authors,<sup>2</sup> the mean levels of B-type natriuretic peptide were as follows:  $244 \pm 286$  pg/mL for patients with New York Heart Association class I heart failure,  $389 \pm 374$  pg/mL for those with class II heart failure,  $640 \pm 447$  pg/mL for

those with class III heart failure and  $817 \pm 435$  pg/mL for those with class IV heart failure. In that study, however, the standard deviations were large for each group. It therefore seems inappropriate to focus solely on the diagnostic value of B-type natriuretic peptide levels when assessing heart failure grade, although a high plasma concentration of B-type natriuretic peptide probably indicates class III or class IV heart failure. On the other hand, and more important, a lower plasma concentration of B-type natriuretic peptide may also be associated with class III or class IV heart failure. Therefore, a low plasma level of B-type natriuretic peptide does not rule out a progressive decline in heart function if there has only been a single reading.

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### REFERENCES

1. Felker GM, Petersen JW, Mark DB. Natriuretic peptides in the diagnosis and management of heart failure. *CMAJ* 2006;175(6):611-7.
2. Maisel AS, Krishnaswamy P, Nowak RM, et al. Rapid measurement of B-type natriuretic peptide in the emergency diagnosis of heart failure. *N Engl J Med* 2002;347(3):1161-7.

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## Correction

The DOI published with a recent News article<sup>1</sup> was mistakenly listed as 10.1503/cmaj.161715. It should have read 10.1503/cmaj.061715.

### REFERENCE

1. Lett D. Manitoba physicians consider DNR guidelines. *CMAJ* 2007;176(3):310-1.

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