

Correspondance

The cost of maintaining adequate antidote supplies

David Juurlink and colleagues reported recently that most acute care hospitals in Ontario do not stock adequate amounts of antidotes.¹ We previously showed that the availability of 13 antidotes was also poor in Quebec (we used more stringent criteria to define adequate stocking).²

Although the situation is worrying, it is probably not as expensive to correct as it may seem. The antidote inventory would only have to be increased by 6 to 18% to correct the problem in Quebec,³ because there is gross overstocking of some antidotes by some hospitals. Because we set our recommended minimal stock of 18 antidotes on the basis of levels of hospital care, we think that keeping an adequate antidote inventory should not be a problem even for smaller hospitals with limited pharmacy budgets; the annual costs in 2000 would have been \$4697 for primary care hospitals, \$7450 for secondary care hospitals and \$14 273 for tertiary care hospitals. Our recommended minimal amount of stock was that which would provide an adequate amount of antidote to treat a 70-kg adult for 12 hours in a primary or secondary care hospital and 24 hours in a tertiary care hospital.³ Most antidotes are used infrequently: the turnover of antidote inventory is 0.3 to 7.4 per year compared with an average of 8.9 per year for all medications in Canadian pharmacies.³ If a hospital uses antidotes appropriately the cost of maintaining an adequate stock should not be a concern, considering that most antidotes can be credited if unused.

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[Two of the authors respond:]

We thank Benoit Bailey and Jean-François Bussièrès for their thoughtful comments on the costs of maintaining appropriate supplies of antidotes. The actual cost of an adequate inventory is influenced by variables other than acquisition cost, including the drug's shelf life and the manufacturer's policy on issuance of credit for outdated product.¹ For example, a course of treatment with digoxin immune Fab antibody fragments may cost up to \$8000. This sticker shock, coupled with the infrequency of use, may lead some hospitals to purposefully not stock the drug. Consider, however, that the manufacturer will credit hospitals for outdated product, and the cost becomes a justifiable one-time expense.

How much of each antidote should a hospital stock? There is no right answer, but suggestions have been published.²⁻⁵ For some toxins, such as acetaminophen, methanol and ethylene glycol, a hospital should be prepared for the simultaneous treatment of more than one patient. Clearly, every hospital should keep at least enough of each antidote in the emergency department to be able to initiate treatment immediately.

Our survey⁶ generated substantial media attention, and this may have helped to mitigate the problem of inadequate antidote stocking at some hospitals. In addition, the simple act of completing our questionnaire may also have led hospitals to recognize and address the deficiencies in their antidote supplies. We were pleased to receive calls from 4 different hospitals in the days after publication asking if they could an-

nounce that they were the one hospital in the province with all 10 antidotes on hand. Such corrective actions are encouraging.

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Personalized medications

The article by Michelle Fischbach and colleagues on pill-splitting in a long-term care facility accurately described my experience at a pharmacy serving many nursing and retirement homes.¹

There are at least 3 factors conspiring to defeat the "start low, go slow" strategy for administering medications in solid oral dosage form: pharmaceutical manufacturers, monographs in the *Compendium of Pharmaceuticals and Specialties* and the Ontario Drug Benefit Formulary.

Although pharmaceutical manufacturers produce drugs in discrete dosage