

Correspondance

A burning issue

The new series in *CMAJ* on the environment¹ is long overdue. With respect to the issue of medical-waste incineration, 2 years ago I set the year 2000 as the target date for shutting down our hospital incinerator. Given the current rate of progress, I am thinking of re-establishing that date as the year 3000.

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1. McCally M. Environment and health: an overview [commentary]. *CMAJ* 2000;163(5):533-5.

Anticoagulation therapy for patients with atrial fibrillation

Robert Hart makes several astute observations in his recent letter¹ and in general I agree that warfarin therapy is not well used in atrial fibrillation; it is overused among low-risk patients and underused among high-risk patients. Perhaps the problem is more with the treatment itself than with the physician using it. Adjusted-dose warfarin treatment is a complex therapy that requires assiduous and ongoing monitoring to achieve good results, with a narrow therapeutic window. It ties patients to the medical system, interferes with travel and complicates use of alcohol and of many common medications. Although a decade has passed since we learned that warfarin is beneficial in atrial fibrillation, many patients with atrial fibrillation who are at a high risk for stroke are not receiving adequate prophylaxis. With new antithrombin agents on the horizon and more effective antiplatelet agents (alone and in combination) already available, perhaps our efforts should be directed toward discovering effective antithrombotic control for atrial fibrillation that

is safer than warfarin therapy and easier to manage.

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Reference

1. Hart RG. Anticoagulation therapy for patients with atrial fibrillation [letter]. *CMAJ* 2000;163(8):956-7.

Validity of utilization review tools

We agree with Norman Kalant and colleagues that it is important to validate the use of utilization review tools in Canada,¹ but we feel that the methodology they used for their study does not reflect the manner in which the tools are implemented and cannot adequately support their conclusions.

Whereas actual utilization review activity uses current criteria, the researchers chose criteria that are now 4 years old. Utilization review at the 2 largest Vancouver hospitals has shown that approximately 10% of inpatient days meet criteria for subacute care, yet the researchers failed to use the subacute care criteria.

In addition, the sample size was very limited, both in number and scope (i.e., 75 charts were reviewed for cardiology only). Generalization as to the validity of the entire tool is thus suspect.

Finally, implementation in our health region includes a secondary review process that improves upon tool validity as well as inter-rater reliability tests for the reviewers. Kalant and colleagues did not include a secondary review process in their study and they questioned its usefulness given "the frequent divergence of clinical opinion among individual physicians."¹ How valid is it to use 3 cardiologists as a "gold standard"?

Although utilization review is not a perfect science, it is one of many im-

portant strategies that we can employ to determine how best to improve our health system.

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Reference

1. Kalant N, Berlinguet M, Diodati JG, Dragatakis L, Marcotte F. How valid are utilization review tools in assessing appropriate use of acute care beds? *CMAJ* 2000;162(13):1809-13.

The conclusion reached by Norman Kalant and colleagues that utilization review tools "have only a low level of validity when compared with a panel of experts, which raises serious doubts about their usefulness for utilization review"¹ is not well supported by the data in this very limited study involving 75 patients in a single diagnostic group.

The authors have not recognized that these tools are valuable for system planning as pointers to potential alternative levels of care. In utilization management they are guidelines, not rules. It would be foolish even to consider using such tools exclusively in the decision-making process about clinical management. In our studies we have repeatedly emphasized that the responsible clinician must at all times make the final judgement,^{2,3} but these guidelines do help to stimulate regular review of the need for hospitalization in the interests of quality care and efficiency. The rate of inappropriate hospitalization may be debated, but it would be difficult to deny that a significant problem exists that can only be addressed by better system planning.

The ISD (Intensity of service, Severity of illness, Discharge screens) guidelines are developed and regularly revised by a more extensive panel process than that used by the authors but they do not take into account whether the more appropriate level of care (for example, outpatient diagnostics or home intravenous therapy) is actually available in the local community. Physicians become justifiably upset if a label of "inappropriate" is applied in the absence of this assessment when the alternatives simply do not exist, but planners need help in creating them.

There is, of course, no perfect tool for assessing the appropriateness of clinical services, but it would be extremely unfortunate if the unjustifiable conclusion of this paper discouraged the use of utilization review tools within the proper context.

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1. Kalant N, Berlinguet M, Diodati JG, Dragatakis L, Marcotte F. How valid are utilization review

tools in assessing appropriate use of acute care beds? *CMAJ* 2000;162(13):1809-13.

2. Wright CJ, Cardiff K, Kilshaw M. Acute medical beds: How are they used in British Columbia? Vancouver: Centre for Health Services and Policy Research, University of British Columbia; 1997. Report no HPRU 97:7D.
3. Wright CJ, Cardiff K. The utilization of acute care medical beds in Prince Edward Island. Vancouver: Centre for Health Services and Policy Research, University of British Columbia; 1998. Report no HPRU 98:14D.

I have 3 comments on the methodology used by Norman Kalant and associates in their article on utilization review tools.¹

First, the AEP (Appropriateness Evaluation Protocol) is an instrument to measure a hospital's operating efficiency with respect to acute patients, not specific clinical appropriateness. Consequently, I do not consider the lack of agreement between this tool and the judgement of a panel of experts to be remarkable: the AEP tool measures provision levels whereas the panel expressed a clinical opinion. Second, the quality of clinical documentation may dramatically influence the appropriateness of services; appropriateness tends to be underestimated in retrospective surveys. Lastly, the panel of experts seems to have based its judgement on a methodology that was only partially

structured and that does not lend itself to standardization.

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Reference

1. Kalant N, Berlinguet M, Diodati JG, Dragatakis L, Marcotte F. How valid are utilization review tools in assessing appropriate use of acute care beds? *CMAJ* 2000;162(13):1809-13.

Norman Kalant and colleagues conclude that utilization review tools are not valid to assess appropriateness of setting.¹ We argue that this conclusion is not supported for several reasons. First, and most importantly, acute care review tools assume that subacute care and acute care are separate, discrete levels. With only minor exceptions, in Canada subacute care is normally and appropriately delivered within the acute care setting. One report referred to by the authors specifically makes this point in terms of the structure of the Ontario health system.² This oversight alone is likely to account for a significant proportion of the mismatch between the review tools for acute care (without including suba-

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cute care) and the opinion of a panel of experts.

The authors base their conclusions on a simple kappa statistic. However, they have not adjusted for the nonindependent nature of the days of stay of the 75 patients reviewed. Our work has demonstrated a 30% correlation between the appropriateness of 1 day of stay and appropriateness of the subsequent day (unpublished data). Nonindependence of observations may amplify disagreement as measured by the kappa statistic.

Finally, the authors claim that no previous studies have validated these tools by comparison with implicit review by a panel of physicians. In fact 2 published studies used physician panels to demonstrate validity.^{3,4}

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4. Inglis AL, Coast J, Gray SF, Peters TJ, Frankel S. Appropriateness of hospital utilization. *Med Care* 1995;9:952-7.

It is hardly surprising that standard utilization review tools developed for US hospitals are not useful in Canada.¹ They have been developed for a different context.

Communities decide how they will deliver care to their constituents. For example, urban communities with a mature home care program will require

fewer hospital days than rural communities where it is not cost worthy to provide a full home care program to all who need it.

One way to increase agreement between clinicians and administrators is to support a process in which clinical experts, administrators and communities decide the appropriate setting for various forms of care. Custom-made utilization review tools can then be implemented to test each day whether patients are in the agreed-on and appropriate setting. These systems can also prompt health care providers to move people to the most appropriate setting.

The aim of utilization review is to increase efficiency and value. In this case, a measure of efficiency would be days of care related to change in health. Consequently the most valuable utilization review tools will be able to link health care activities with health care results to help health care providers understand which activities are pertinent to a result and which are superfluous.²

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1. Kalant N, Berlinguet M, Diodati JG, Dragatakis L, Marcotte F. How valid are utilization review tools in assessing appropriate use of acute care beds? *CMAJ* 2000;162(13):1809-13.
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[The authors respond:]

We based our conclusions on our results together with those of previously published studies (Table 3) of general medical, surgical and psychiatric patients.¹ Our sample size was 75 for admissions and 461 for subsequent days (because each day is rated independently); the average kappa scores

were based on much larger samples (e.g., 759 admissions and 3142 days of hospitalization for the ISD). We therefore believe that the conclusions are well grounded.

With any type of project, techniques that are current at the outset may become nominally outdated before termination. Since the ISD and the MCAP are proprietary, we are unable to determine if there have been substantive changes in the tool criteria, but a time series of published kappa values does not show an increase in validity over the past decade. The comment about the age of the tools implies that current versions have higher validity than earlier ones; is there evidence of this?

We did not use subacute care criteria because we were focusing on acute care; as noted, we stopped case evaluation when the patient was moved to a different level of care.

We omitted the secondary review for reasons already given, including a theoretical concern that it would probably decrease validity. Yoel Robens-Paradise and colleagues assert that a secondary review improves tool validity; what is their evidence for that?

The validity of an expert panel cannot be assessed because there is nothing accepted as more accurate to which it can be compared.

Charles Wright and Karen Cardiff's comments on utilization management are undoubtedly correct, but they are irrelevant to an assessment of tools for utilization review. These writers state that we have not recognized the value of these tools for system planning; we would put it differently — that they do not recognize that if the tools fail to accomplish what they have been designed for, then they are not valuable. If, for example, a tool misidentifies a significant number of days as inappropriate, a reviewer searching for the reasons for the inappropriate stay (when in fact there are none) may be led to form erroneous conclusions about the relative importance of the various reasons for such days and then to make inappropriate changes in the system. Nobody would trust a new laboratory test with as low a level of accuracy as that exhib-

ited by these tools; why have so many hospitals accepted them without first validating them? We believe that the onus is on those who choose to use them to show that they do what they are supposed to do.

Aldo Mariotto claims that the AEP measures operating efficiency (undefined), not appropriateness. However, one of the developers of the AEP² stated clearly that its purpose is to assess appropriateness of hospitalization; furthermore Coast³ commented on its inability to measure efficiency. We agree that the quality of the clinical record is a critical factor in applying these tools, whether concurrently or retrospectively; any deficiencies were constant for the tools and the panel in this study. As to structuring the panel review, the panel's task was to arrive at a clinical judgement, normally an idiosyncratic process; to structure the review process would have defeated its purpose.

Peter Dodek and colleagues argue that a major source of disagreement between a review tool (specifically the ISD) and the panelists is the fact that Canadian hospitals generally do not have separate subacute care units; the panel may therefore consider a day in acute care as appropriate because there is no alternative. This was not of concern in our study because we have a subacute cardiac unit adjacent to the coronary care unit. The original manuscript stated that "the panel was also asked to recommend, for those days not requiring care at an acute level, a more suitable level of care; for this purpose, it was assumed that all levels of care were available." Unfortunately, this sentence was deleted to meet space limitations.

Dodek and colleagues criticize us for claiming to be the first to carry out a validation study of these tools; indeed all the data in Table 3 are taken from such validation studies, including the 2 to which they refer (see our references 16 and 20).¹ We did, however, point out that the ISD and the MCAP had not previously been validated in Canadian studies.

Dodek and colleagues raise an interesting question concerning the application of the kappa statistic to the pool of all days in hospital (other than the admission day): they suggest that the days of a given patient are not fully independent of each other (e.g., if day *a* is inappropriate, then it is possible that day *a* + 1 will be inappropriate), and that this "may amplify disagreement as measured by ... kappa." However, it seems equally likely that nonindependence may amplify agreement and lead to a false elevation of kappa. To settle this question, we have calculated kappa scores separately for each of the hospital days 2–6; in this way, each kappa value is based on only 1 observation per patient. The values of kappa are as follows: day 2, 0.40 (*n* = 72); day 3, 0.123 (*n* = 64); day 4, 0.42 (*n* = 59); day 5, 0.287 (*n* = 55); day 6, 0.181 (*n* = 48). Thus, removal of any hypothetical dependence effects does not raise the kappa as predicted by Dodek and colleagues; we conclude that nonindependence of consecutive observations is not responsible for the low kappa values found in validation studies.

David Zitner and colleagues describe a hypothetical utilization review process that approaches the ideal but might be very time consuming. We agree with Tu⁴ that more research is

needed to develop a useful utilization review tool.

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