

# Guidelines: the new catechism of modern medicine?

M. Levi

Department of Medicine, Academic Medical Center, University of Amsterdam, Meibergdreef 9,  
1105 AZ Amsterdam, the Netherlands, e-mail: m.m.levi@amc.uva.nl

Not very long ago, the ultimate sources of medical knowledge were textbooks. Textbooks provided guidance on diagnostic and therapeutic management of virtually all known diseases and were crucial foundations for knowledge-based medicine. Textbooks were written by experts, usually highly respected key opinion leaders in a given field, who wrote the chapters in these books with much endeavour and determination and to the best of their knowledge. In fact, textbook medicine represented a highly organised form of authority-based medicine. In more recent years, however, when medicine began moving at a much faster pace, many physicians came to realise that textbook information was often outdated (not in the last place due to the unbelievably long production schedules of publishers), not always evidence-based, was often not very accessible and was relatively hard to handle from a convenience point of view. Although not completely extinguished, the prominent place of textbooks in medicine is rapidly losing ground.

In a more evidence-based approach to medicine, diagnostic and therapeutic management recommendations are summarised in guidelines. Guidelines contain practical advice for many clinical situations, preferably based on clinical trials but in many cases also relying on descriptive studies, case series or even on consensus or expert opinion. This last form of 'evidence' renders the distinction between evidence-based medicine and authority-based medicine less sharp than often thought. Guidelines make the practice of medicine more uniform and may also provide guidance for young physicians in situations that may be complex and require a series of simultaneous diagnostic and therapeutic interventions.<sup>1</sup> The guidelines for acute medicine, as published by the Netherlands Association of Internal Medicine ('Acute Booklet'), is a very good example of highly effective evidence-based assistance to residents on call and seeing patients at the emergency department. Use of these and other guidelines has been easily and very solidly implemented in day-to-day medicine.<sup>2</sup>

Many journals like to publish guidelines, which are well written and often cited. The ten guidelines that were published in the Netherlands Journal of Medicine in the last two years were 3.2 times more often downloaded in the Journal's database and received 1.6 times more citations than other articles in the Journal.<sup>3-12</sup>

However, we must be careful that these practice guidelines are not becoming the new catechism of medicine. Very often a resident, when asked why she (or he) has chosen a particular diagnostic approach or therapeutic intervention, replies that this strategy was 'advocated in Up-to-Date' or was done 'according to the Acute Booklet'. Also, when a discussion starts on the daily morning report on the best treatment choice for a specific patient, many interns and residents (and senior colleagues alike) as in a reflex reach for the PDA containing all sorts of guidelines in their pocket and start looking what 'the bible' has to say on this subject.

Obviously, guidelines are carefully drafted and often provide solid support for good clinical practice. However, guidelines can never take into account individual patient properties and specific clinical situations. For example, treating a ketoacidosis in a dialysis patient exactly according to the standard protocol in the general guidelines for treatment of ketoacidosis will certainly lead to major complications or even death in this patient. The underlying problem is of course that (1) it is often forgotten that guidelines are true for groups of patients but need tailoring to a specific patient, and (2) that the guidelines are often based on clinical trial evidence, which is applicable to populations that may differ from the patients that are often seen in hospitals.<sup>13</sup> For example, in the six pivotal trials that demonstrated the superiority of warfarin over placebo in the prevention of thromboembolic complications in patients with atrial fibrillation, 28,787 patients were screened but only 12.6% of these patients were included in the study. Similarly, only 14,614 out of 36,945 patients (23%) with myocardial infarction or

unstable angina were included in five major trials on the use of vitamin K antagonists for the secondary prevention of thromboembolic events.<sup>14</sup> The fact that the majority of patients were not considered to be eligible for inclusion in the clinical trials may have a major impact on the external validity of the trials. In fact, many of the patients that we see in our office or in the hospital may be quite different from these trial populations.<sup>15</sup>

Guidelines virtually never mention the type of patients to whom the evidence is applicable. That would not be a problem in itself if the trial population were to properly reflect the whole group of patients. However, this is often not the case. A large review of 214 trials of anticoagulants in patients with acute myocardial infarction found that in more than 60% of these trials patients aged over 75 years were excluded, whereas patients of this age often present with myocardial infarction in real practice.<sup>16</sup> It is not always easy, and sometimes dangerous, to translate the evidence coming from these selected trial populations to the more general population. After the publication on the beneficial effect of spironolactone in patients with severe heart failure, for example, the prescription of this agent in patients who would never have been admitted to the original clinical trial resulted in excessive rates of hyperkalaemia and related morbidity and mortality.<sup>17,18</sup>

Taken together, the development and implementation of guidelines has provided a solid platform for the introduction of evidence-based medicine in clinical practice. However, we must be careful to use guidelines for what they are: handy collections of clinical evidence translated into management advice, useful to guide but certainly not dictate treatment of patients. Hence, guidelines are not the catechism of modern medicine but –if properly used– may undoubtedly be helpful to improve modern medicine.

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