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Quaternary prevention as a guideline for the editorial team of an evidence-based medicine journal

Prevenção quaternária como diretriz para a equipe editorial de uma revista de medicina baseada em evidência

La prevención cuaternaria como una guía para el equipo editorial de una revista de medicina basada en evidencia

Michel De Jonghe. Deputy Editor for French texts of Minerva Journal. Invited lecturer at the Faculty of Medicine of Catholic University of Louvain. Academic Centre for General Medicine. Louvain, Belgium. michel.dejonghe@uclouvain.be (*Corresponding author*)

Abstract

This article aims to analyse the editorial activities of Minerva, a Belgian evidence-based medicine (EBM) journal, according to the guidelines of quaternary prevention. From the editorial production of Minerva, a narrative analysis of its writing activities was carried out in relation to clinical questioning, research, critics and interpretation of relevant clinical information to professional practice. The limits of EBM are clearly detailed, as well as the tools and lines of reflection issued by the editorial team in order to promote the implementation of EBM in clinical practice. In this way, it is intended to prevent unnecessary medical interventions by strengthening the quaternary prevention as a key competence of healthcare staff throughout their professional life to the service of patients, which may be reinforced by the work of the editorial team of an EBM journal.

Keywords:
Quaternary Prevention
Evidence-Based Medicine
Editorial Policies
Practice Guideline
Review Literature as Topic

Resumo

O presente artigo tem como objetivo analisar as atividades de redação da revista Minerva, periódico belga de medicina baseada em evidência (MBE), de acordo com as diretrizes da prevenção quaternária. A partir da produção editorial da revista Minerva foi realizada uma análise narrativa de suas atividades de redação em relação ao questionamento clínico, à pesquisa, à crítica e à interpretação de informações clínicas relevantes à prática profissional. São detalhados os limites da MBE e as ferramentas e linhas de reflexão emitidas pela equipe de redação da revista a fim de favorecer a implementação da MBE na prática clínica. Dessa forma, se pretende prevenir o intervencionismo médico desnecessário, ao se fortalecer a prevenção quaternária como uma competência fundamental dos trabalhadores da saúde ao longo de sua vida profissional a serviço dos pacientes, o que pode ser reforçado pelo trabalho da equipe editorial de uma revista de MBE.

Palavras-chave:
Prevenção Quaternária
Medicina Baseada em Evidências
Políticas Editoriais
Guia de Prática Clínica
Literatura de Revisão como Assunto

Resumen

Este artículo tiene como objetivo analizar las actividades editoriales de la revista Minerva, periódico belga de medicina basada en evidencia (MBE), de acuerdo con las directrices de la prevención cuaternaria. A partir de la producción editorial de la revista Minerva, fue realizada un análisis narrativo de sus actividades de redacción en relación con el cuestionamiento clínico, la investigación, la crítica y la interpretación de la información clínica relevante para la práctica profesional. Se detalla los límites de la MBE y las herramientas y líneas de reflexión emitidas por el equipo de redacción de la revista, con el fin de promover la aplicación de la MBE en la práctica clínica. Por tanto, si desea evitar la intervención médica innecesaria, al fortalecer la prevención cuaternaria como competencia clave de los trabajadores de salud durante toda su vida profesional al servicio de los pacientes, lo que puede ser reforzado por el trabajo de la equipo de redacción de una revista de MBE.

Palabras clave:
Prevención Cuaternaria
Medicina Basada en Evidencia
Políticas Editoriales
Guía de Práctica Clínica
Literatura de Revisión como Asunto

Introduction

Minerva is a Belgium journal of Evidence-Based Medicine [EBM] fully subsidized by the public funding, publishing 10 issues per year, and distributed to a little less than 6500 subscribers. In the year 2014 nearly 210,000 visitors accessed its website.[1] Minerva provides a critical analysis of relevant publications in the recent international literature and its mission is the promotion and dissemination of independent scientific information. Its target audiences are doctors, pharmacists and other health professionals working in primary health care. The editorial team systematically monitors the international

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EBM literature in more than 20 scientific journals, selects articles deemed relevant, organises a structured summary of its main findings, as well as provides an explanation and critical recommendations for medical practice in the two Belgium federal languages: French and Dutch.

Quaternary prevention is the prevention of unnecessary medical interventions, and as such, one of the cornerstones of medicine (*primum non nocere*).[2] Two tools emerged to assist the physicians in this task: the Narrative Based Medicine (NBM)[3,4] which aims to listen to the patients in order to better understand their real demands; and the medicine based on levels of evidence (or levels of proof, according to French translation),[5] which aims to support clinical decisions, diagnostic,[6] therapeutic,[7,8] preventive[9] and palliative care,[10] from a critical evaluation of the available medical information in order to support both doctors' competencies and patients' goals.[11]

When working at the editorial team of an EBM journal as Minerva we should take into account the following question: How to help the professional faced with a patient with a health problem, in a particular context, to be attentive about invasive medical interventions? This will be discussed in this article from different perspectives: (a) clinical questioning and finding information; (b) the critical evaluation of information; (c) the application of the elements considered as clinically relevant; (d) the identification of methodological limitations; and finally (e) the transmission of a critical attitude to medical students.

The clinical questioning

We can distinguish two types of questions (general and specific) arising when a clinician is faced with a particular patient. When the question is general, it is called *background question*, which includes two main components: the first encompasses the disease, examination, and treatment, while the second comprises an interrogation question such as: Who? What? How? Why? etc. Generally, the knowledge of doctors and medical students to answer these questions is limited. When the issue is specific, we speak of *a foreground question*: the knowledge of doctors is strong and the demand is accurate.

The foreground question (prominent issue) has 4 elements, in the origin of the famous acronym PICO, basis for the whole critical reflection: a patient or a health problem (P), intervention (I), a comparator or control (C) and an outcome (O). The first remark is: EBM will provide answers to very specific questions. Its purpose is not to present an overview of a health problem (e.g. what to do in case of chest pain), typical of a background question, addressed by a lead course speaker, often identified as a subject expert. When the objective of a publication is a summary of documented facts (or a practice guideline) it is necessary for the authors to develop a well-defined, rigorous and accurate strategy of searching, assessing and writing.

The research of information

The more the experience of a clinician increases, the more the need to move towards foreground questions. Therefore, more specific readings become increasingly relevant. Evidence-based medicine can then respond to their needs in the same way as a specialist. From the perspective of the editorial team, it is necessary to have a target audience in order to seek, select, document, evaluate and explicitly interpret the information (if possible graded on the basis of levels of evidence), and to stay open to readers' criticism. In a nutshell, the information should be clinically useful. It should also be updated, easily accessible, and shareable. Beyond the document writing and inspired by computational world, the terms of corrective, adaptive and evolutionary maintenance make all sense. We can therefore reasonably ask if traditional media such as textbooks are still relevant in view of these requirements?

The critic of information

The critical requirement of the clinician will ultimately lead to the type of researched response. Is a response based on evidence as rich as one answer from a consultant (specialist)? If so, this richness could come from the principle of uncertainty in medicine whose probabilities are currently the best reflection of this characteristic. Nothing is '*black or white*' in medicine: all clinicians work in grey areas. When doctors make patients believe that their medical response is neutral and without flaws, it is reasonable to think that professionals slide towards quackery. When doctors make patients believe in an investigative

hypothesis - for example, that the principle of benefit of screening for a disease, which identifies the disease before its clinical expression, is always and necessarily a relevant fact to the patient - in reality, they show a 'dangerous' naivety. The example in the history of breast cancer screening is probably the strongest evidence available nowadays.[12] The need for evidence-facts forces to set up studies that: (1) have well-documented protocols; (2) avoid maximum bias in data collection; (3) present results in the most correct way; (4) mention the possible sources of conflict of interest; and (5) develop a critical strategy.[13]

However, it is important to note in the example above the importance of the ability of methodological evaluation, the quality of results' interpretation and their external validity to ultimately be able to decide whether or not, the observed results can or should change the practice. The members of Minerva's editorial team learn how to develop skills on methodological considerations as well as result interpretations, including their external validity to the health care system within which their target audience works. The editorial team works to synthesize this criticism in some considerations applicable in clinical practice. The conclusions calling for further research or the impossibility to reach a conclusion might frustrate the doctors, but they result from the complex process described above.

The limitations of EBM

Evidence-based medicine certainly does not bring all the answers since there are still numerous 'grey areas' or not studied subjects. Hence, all work propositions derived from the analysis of conclusive facts graded on the basis of levels of evidence should necessarily be adapted according to the demands, needs, and fears of patients and professional's expertise.[6] Therefore, responses based on more conventional approaches such as pathophysiology, pharmacodynamics and opinions of experts make all sense. Beyond the methodological limitations regularly identified by experts (that we will are not going to develop in this article, although the editorial team must regularly to echo or give understanding keys to their readers)[14] the pragmatic limits related to studies and practice guidelines are also presented. This highlights the important role of the caregiver as an agent of quaternary prevention. The role of the editorial team is also to reveal and to challenge the professionals of health system on the evident limits. We will describe in this article only two, but they properly illustrate this problem.

The problem of multimorbidity[15]

The results of randomized clinical trials (RCT) are one of the foundations of the current state of our knowledge. However, patients with multimorbidity are usually excluded from these studies.[16] This results in clinical practice guides centred and limited to only one health problem. Applied indiscriminately to patients with multimorbidity,[17] this recommendations lead to fragmented care and a proliferation of medications[18] and non-drug therapeutic approaches, sometimes even contradictory.[19] It is appropriate to want to overcome the limits of specific pathology favouring a comprehensive and integral approach. The management of multimorbidities thus requires a paradigm shift in order to transcend from a "problem-oriented treatment" to a "goal-oriented treatment" that is defined by the patients themselves, as well as discussed, negotiated and evaluated with the therapist. In addition, the particular contextualization of this treatment needs to be studied in multiple pragmatic approaches. We might postulate that RCTs could still continue to be the first line 'gold standard', but the results in terms of morbimortality can be different. New methodological approaches are required to meet such needs and questionings.

The problem of the definition and evaluation of care goals[20]

In a study in United States, patients report that even for common problems in primary care - such as the introduction of a medication for high blood pressure or high cholesterol, or to undergo a mammography for breast cancer screening - decisions related to their own health are made by health professionals and often paternalistic.[21] A Canadian study showed that even in palliative care, while the vast majority of patients admitted for emergency hospitalization had thought about their goals of care, only 30% of patients had dared to present them to their GP and only 17% to their specialist,[22] and that the desire to limit themselves to 'comfort care' was documented in only 5% of cases.

Furthermore, in terms of defining and evaluating the care goals, or more broadly, in terms of defining the patient's life goals, there is a gap between the medical world and the legal/judicial world. Indeed, issues such as financial problems, opportunities to recreation and leisure, improving chances of personal or professional project success,[23] significantly expand

the usual objectives of therapeutic treatment such as morbidity, mortality and quality of life. As such questions are not being taken into account in studies, they cannot be evaluated and no recommendations can be made. Also, as they are not being integrated in the practices or health policies, they are not documented. Unfortunately to our knowledge, no internationally validated tool is ready to achieve this objective.

Tools to the implementation of EBM

To ask a question, to find relevant clinical information and take a critical look at the results observed are three essential steps. However, despite the multitude of available practice guidelines, many wonder if the investments in the creation of this tertiary literature really worth it as the gap between clinical practice and the recommendations can be very important. Therefore, what to do to change practice? Members of the Minerva editorial team are sensitive enough to inform their readers about the tools available to improve the practical implementation of these proposals in practice.

The IT system

Providing each patient with the appropriate information is a duty of health professionals in order to negotiate together an optimal plan of care. To the best of our knowledge, only computer systems, which facilitate decision-making process based on automatic alerts (not on demands) improve significantly medical performance regarding evaluation of process, not outcomes, such as high morbidity or mortality.[24] The organisation of so called preventive activities is an area in which IT systems are particularly useful. It has showed significantly positive results for adherence to the recommendations in practice,[25] especially for calculating cardiovascular risk or treatment of dyslipidaemia.

This goal, however, requires that editorial teams comply with data structuring rules and terminological rigour that are not, *a priori*, their area of expertise. Moreover, the goal of such systems will never tell the clinicians what to do. Integrating the specificities of patients, their worries, their life goals, both personal and professional, in order to make a coordinated individual care plan, will always emphasize the quality of the exchanges experienced in the doctor-patient relationship.[24]

Favouring a multifaceted approach

The Cochrane group "Effective Practice and Organisation of Care" (EPOC)[26] grasped this issue by favouring a comprehensive approach demonstrating that the problem cannot be reduced to only ONE miracle solution.[27] Organisational, financial, professional and legal interventions are also analysed. Target audiences are varied: professionals, teachers, students, low-income regions, etc. A multifaceted strategy combining several approaches and several modes of communication are thus currently recommended.[28] Adapting funding from the health system to research could also be experienced. For instance, in Belgium, we are sceptical when new drugs are reimbursed in full, an agreement of 'vital importance for consultants/specialists',[29] when the only evidence of their effectiveness focuses on intermediate outcomes such as a (moderate) reduction in glycated haemoglobin (HbA1-c) in type 2 diabetes. Again, the central role of the caregiver in preventing unnecessary medical interventions proves essential and the role of Minerva editorial team is to challenge the professionals on the limits of the new marketed drugs or, conversely, to provide information on effective interventions, but which might not be available or accessible to patients.

Transmission to the students

The Barrows model illustrates that the learning process of clinical approach can be supported by EBM in each of its stages[30] and it is important that students become aware of it during their professional training. We also insist on what some authors call attitude or relation to medical knowledge[31,32] and that others call "*evidence mindness*"[33] that enables students to develop a questioning reflex about their achievements, their beliefs, and their knowledge. So, it is to teach them to manage uncertainty in a changing context and probabilistic environment and also to reassure them about the relevance of this approach. All teachers should be aware of this approach, as well as tutors/trainers. The *Best Evidence Medical Education*

(BEME)[34] which proposes to use the best available 'evidence' in medical education, provides useful documents available to trainers. For instance, colleagues, supervisors, mentors, and tutors,[35] play an important role in the development of doctors in training. Hence, helping and supporting trainers can also be part of the duties of an editorial team of an EBM journal.

The principle of precaution[36]

Is there a tool for the implementation of the Hippocratic recommendation: As to diseases, make a habit of two things - to help, or at least do no harm[37] whose quaternary prevention would be the worthy successor? It was at the Rio Summit, in 1992, that the principle of precaution, inherited from philosopher Jonas, was stated as a theme now recognized as a general principle of action by national, European and international laws related to the topic of sustainable development.[38]

The principle of precaution requires a context of uncertainty and incompleteness that demands sequential decisions based on the evolution of knowledge and on economic evaluation allowing adequate arbitration according to the context. To take action and vigilance measures after attempting to assess the best possible risk and uncertainty is to apply the principle of precaution. So, neither "do nothing" nor "prepare the heavy weapons." Rather, it is to adapt the means and vigilance on the risk assessment and to be prepared to modify the former in function of the latter. According to Winne[39] precaution:

> *…Allows confronting uncertainty rigorously by debating social values and needs, rather than defining generally inadequate safety margins. This gives room for uncertainty by calling to a debate among citizens on the type of human relations we want to promote and the content of legal relationships that we want to have with nature and others.*[39] (165-176)

Applied to medicine, the principle of precaution provides, in our view, a possible working method to quaternary prevention and the reading of an EBM literature should allow clinicians to have the necessary tools to try to achieve it.

Conclusion

We have gone through some path of useful information for clinicians and health professionals and its related challenges. Quaternary prevention found in the original studies and published reviews in recent years great number of working hypotheses and an inexhaustible ground of development. One of the most publicized and discussed issue in recent months is deprescription,[40] joining an early concern of Philippe Pinel (1745-1826): This is not an art of little importance as correctly prescribe medications, but it is a much more difficult art to know when to stop or not to prescribe them.

This collective enthusiasm is certainly justified and reveals a real concern for patients, though remains a fear of emerging a new paternalism: in name of patients' safety (based on observations) a number of more and more clinicians decide not to prescribe anymore, or stopping prescribe, or not even discuss with their patients the relevance or not of a prescription. Prospective randomized studies (conducted in double or triple blind) based on strong judgment criteria should be carried out to establish the harm/benefit ratio balance to patients before they can be fully validated as an approach in clinical practice.

Critical thinking should be applicable to all work assumptions, regardless as attractive as they are *a priori*, and this is the price that backs the definition of EBM. This makes all sense, as Sackett himself in 2000 stated: *"*[EBM is the] integration of best research evidence to clinical competence of the caregiver and patient values*".*[41]The objective of the quaternary prevention to prevent against unnecessary medical interventions becomes an essential competency of all health care providers throughout their professional lives to the service of patients[42] and can be enhanced by the work of an editorial team of an evidence-based medicine journal.

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