In 2007 the *Croatian Medical Journal (CMJ)* celebrated its 15th anniversary as a peer-reviewed, non-profit scientific journal (1). Over the years, the Journal has become internationally visible through being included in MEDLINE/PubMed, EMBASE/Excerpta Medica, Scopus, and Thomson Scientific’s databases Current Contents/Clinical Medicine and Science Citation Index – Expanded (2-4). From the 2007 volume on, it has been also available in PubMed Central, a free digital archive of biomedical and life science journal literature. The Journal’s content has been freely available from [www.cmj.hr](http://www.cmj.hr) since 1999. During the last 15 years, its quality and international visibility have notably increased, as evidenced by the analysis of its impact factor (5). The aim of this article is to provide a brief overview of the CMJ’s major activities in the research community at the so-called scientific periphery (6).

**Author-helpful policy of the Journal**

The Journal’s work began in 1991, even before the publication of its first issue, with its first supplement on medical aspects of the war in Croatia. We learned that our colleagues had very important data to present to the global medical community, but little skills in presenting them in a form of a scientific article (6). We then decided that educational work with authors would be our primary goal (7,8) – this has remained our main activity to this day. Author-helpful policy of the Journal has required a considerable amount of work, but it paid off by the increase in the number of submitted papers (4), increased popularity of the Journal in the targeted scientific communities (9), as well as our authors’ increased awareness about the importance of reporting research (10) and scientific communication skills (11).

**Theme issues**

In the past 15 years, the CMJ has published regular issues relevant for the health care in transitional, developing, and newly emerging countries, including 33 theme issues (Table 1), some in cooperation with other journals, like “Aging,” and “Poverty and Human Development.” At the moment, we are working on the theme issue “Towards a scaling-up of training and education for health workers,” which is scheduled for June 2008 in cooperation with the World Health Organization.

The CMJ also published the following books in its book series “CMJ Book Collection:” Oranges and Dead Fish (12), Psycho-
therapist in the Croatian Independence War (13), Revitalization of Academic Medicine (14), Quality of Care (15), The Catalogue of Knowledge and Clinical Skills (16), and Medicine and Peace (17). One more book, Paths of Medicine, which includes Prof. Norman Sartorius’ columns that were published for four years, is planned for the spring of 2008.

The student CMJ has been published once a year since 2002. It aims at stimulating medical students to do research, write down their results, and submit them to strict peer review procedure. To compensate for students’ lack of experience, the members of the CMJ’s Editorial Board intensively work with them on transforming an idea into a hypothesis, in conducting research, and finally in writing the manuscript, its revisions, and responses to reviewers’ comments.

To peace through health

During the 1991-1995 war in Croatia, the CMJ participated in humanitarian (18) and peace-promoting activities (19). It has published more than 100 articles on war medicine, casualties, organization of health care during the war, public health issues in war, and peace through health concepts (20,21).

In the years following the war, the CMJ continued to cover these topics, as well as those related to the aftermaths of war, such as forensic identification of victims and post-traumatic stress disorder (Table 1). The CMJ’s editors also explored the roles of medical journals in peace promotion and war prevention (20,22), and joined an international project to develop an online course for medical peace work (23).

Educational activities

Assistance to wartime physicians

The Journal’s educational activities began with editorial training of physicians from the war-affected countries, which introduced an author-helpful policy, reflected in the CMJ editors’ motto: “Through education to excellence” (7,24). This policy was introduced during the war in Croatia, through assisting frontline physicians in writing their reports on war medicine (21). This was proven to be successful not only because relevant contributions were acquired, but also because it was a means to raise interest in research work and scientific productivity of the tutored authors (11).

Obligatory undergraduate course on principles of research in medicine

The CMJ’s educational efforts continued in 1996 with the introduction of a mandatory course for the second-year medical students on the principles of scientific research, paralleled by the publication of the text-

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book “Principles of Research in Medicine.” In 2003, the evidence-based medicine (EBM) concept and guidelines for practice were added to the course and the textbook. In 2008, we published the 4th Croatian edition of the textbook, and its first edition in English – for medical undergraduate program in English at the Zagreb School of Medicine, as well as for the international audience (25). The current edition addresses the principles of research and writing in medicine and evidence-based medicine – study planning and design, critical data analysis, and information search and retrieval – and provides fundamental guidelines for writing a scientific article and responsible conduct of research. The undergraduate course on the principles of scientific research was incorporated in the curriculum of all four medical schools in Croatia and the Mostar University School of Medicine in Mostar, Bosnia and Herzegovina.

Postgraduate education

Editors of the CMJ actively participate in the postgraduate education in science methodology at all four medical schools in Croatia and the Mostar University School of Medicine. In Split and Mostar, the students are offered advice on planning and writing their research, statistical analysis, and assistance in adoption of EBM concepts and practice. Due to the expertise and understanding of the local faculty, the postgraduate study in Split is founded on the principles of EBM and the postgraduate study in Mostar on the concept of quality of care (15).

Continuing education

The CMJ also actively participates in the continuing medical education by providing regular workshops on research planning and writing, not only in Croatia but in the whole region, including Bosnia and Herzegovina, Macedonia, and Slovenia (26). We also aim to provide assistance to researchers by a knowledge gateway and active help available at the CMJ's Croatian Pages [http://www.cmj.hr/HS], started in 2007.

Education programs in Bosnia and Herzegovina

The CMJ also participated in two Trans-European Program for Co-operation in Higher Education in Central and Eastern Europe (TEMPUS) projects, together with medical schools from Bosnia and Herzegovina and medical schools from several European Union countries. The first project had an aim to create modern curricula for all medical schools in Bosnia and Herzegovina and the second aimed to introduce quality assessment in medical education in that country. The CMJ participated in these projects by helping to design and conduct studies assessing the results of the projects. This cooperation resulted in several publications (27-29), establishment of a long-term cooperation, and ultimately, an increase in the number of manuscripts submitted to the CMJ (30,31).

Sections of the CMJ

To promote Croatian science and encourage the researchers, the CMJ editors established a special section, Croatian International Publications. The section presents the selection of abstracts of the publications of Croatian scientists in international journals. It has to be pointed out that its editor has a complete editorial freedom, independently of the influence of Editorial Board or editors-in-chief.

The Cover Page section usually includes an essay related to the Journal's cover page. The Journal's cover page is dedicated to Croatian natural, cultural, scientific or sports heritage.

The CMJ also has three regular columns, prepared by different contributors, who write about important and interesting sub-
jects from their fields. Each columnist writes up to 20 columns, which are later published as a book.

**Research activities**

Members of the CMJ’s Editorial Board have been active in research related to peer review, journals, and publishing (32-40). Running and editing the journal offered a suitable research model for several avenues of research. We have been actively researching moral reasoning and integrity issues among medical students (41-43), students’ and physicians’ attitudes toward science (44-46), as well as general issues in medical education (11,47).

**Culture of scientific integrity**

Since 2001, the CMJ has been promoting the culture of scientific integrity as a vital component of the research process (48,49). In 2002, we defined and introduced the post of the Editor for Research Integrity, organized the training of editors in this area of expertise, and started teaching on the responsible conduct of research.

An important result of our initiative and efforts was the creation of the Committee for Ethics in Science and Higher Education, as the national body appointed by the Croatian Parliament, with the aim to promote ethical norms and values in science and higher education (50).

**Legal regulation of the CMJ**

The CMJ began as most other small scholarly journals – by personal efforts and enthusiasm, without clear definitions of the roles and responsibilities of its stakeholders. After defining the legal framework that would ensure its growth and work, the Journal finally got its formal management structure in 2004 (51).

All four medical schools of the Croatian universities signed the agreement on the structure and function of the Journal (52), which protects editorial freedom and responsibility, as well as the Journal’s continuing growth.

**International campaign for the revitalization of academic medicine**

In 2004, the CMJ joined the initiative of the BMJ and other journals to explore the future of academic medicine (53). One of the CMJ’s editors-in-chief was actively involved in a working group aiming to envision the possible scenarios for the future of academic medicine (54). The CMJ gave an important contribution to the Campaign by publishing a collection of essays on academic medicine from all over the world (14). After the Campaign produced the five scenarios for the future of academic medicine (54), one of them, called Global Academic Partnership (GAP) was selected by the University of Ottawa to act upon. The CMJ assisted in connecting medical schools of the University of Ottawa in Canada and University of Split in Croatia to join the GAP project.

**Evidence-based medicine and CMJ’s “Croatian Pages”**

Evidence-based medicine principles have been a part of the Journal educational activities, both at the undergraduate and continuing medical education levels. In 2007, we started the “Croatian Pages” Section of the CMJ (www.cmj.hr/HI8) as the knowledge gateway aimed to offer to Croatian-speaking readers’ key instructions for planning and writing research, application of EBM principles in the everyday medical practice, and introduction of patient decision aid into the medical practice in the area. We assumed that not all practicing physicians in this part of the world speak Eng-
lish and possess computer skills for searching the Internet, so we offered them advice and concrete help with the application of EBM technique to their patients, all in Croatian language. We established a service where any physician can contact our EBM expert, formulate a concrete and specific question, and obtain the answer in Croatian (abstract, list of relevant literature, and interpretation) from the Internet EBM sources. The goal of CMJ’s Croatian Pages is to improve quality of care through the identification and promotion of effective practice and the elimination of practices that are ineffective or harmful.

The CMJ is currently also working with colleagues from Canada and Italy on establishing a Croatian Branch of the Cochrane Centre in near future, with the aim to support the production of systematic reviews. This activity is planned to be a part of a larger collaboration project between the Split University and Ottawa University, including the creation of a Croatian Center for Global Health in Split.

Evidence-based writing

The CMJ has organized several international workshops on evidence-based writing, with the contribution from the leading world’s medical journal editors (24).

By endorsing the International Committee of Medical Journal Editors’ Uniform Requirements for Manuscript Submitted to Biomedical Journals (55), the CMJ has continued to promote evidence-based writing. New revision of the Journal’s Guidelines for Authors provides extensions of the requirements for reporting specific type of studies, such as: new CONSORT extension for reporting cluster randomized trials, harms in randomized trials, noninferiority and equivalence randomized trials, controlled trials on herbal interventions, and CONSORT for Abstract, as well as the STROBE for reporting observational studies in epidemiology, and the REMARK for tumor MARKer prognostic studies (56).

Clinical trial registration

After the introduction of policy of trial registration in 2004 (57), the CMJ has continued with promotion of the culture of transparency in research and reporting, publishing study protocols, negative results, and trial registration. In the most recent revision of the CMJ Guidelines for Authors, we provided new definition of the types of trials that must be registered (the WHO’s definition of clinical trials), new timelines, and a new list of trial registries (58-60).

Good clinical practice

To promote Good Clinical Practice (GCP) in clinical research, the CMJ editors joined the European Forum for Good Clinical Practice (EFGCP). The CMJ participated in the activities of EFGCP Ethics Working Party by providing the Report on the Procedure for the Ethical Review of Protocols for Clinical Research Project for Croatia as a European Union candidate country. A further plan is to start cooperation with the EFGCP Education Working Party to promote education among several groups engaged in clinical research – investigators, monitors, members of ethics committees, regulators, and patients.

Conclusion

Looking back at the first 15 years of the CMJ and ahead to the future, it is clear that the major aims of the CMJ are education, setting high scientific, research, and ethical standards, and serving as a bridge between the so-called scientific periphery and the mainstream science (61). We are aware that the CMJ will always remain a small journal. However, each
journal has its own niche, its own “call,” that is wider than its scientific content, and different for each journal. We believe in the goals of CMJ as depicted here, but we also believe that its role is much wider. Albeit proud and happy with its publishing achievements, we believe that the Journal can and will have a wider social role, ranging from the promotion of excellence in research to peace-making.

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References
34. Bates T, Anic A, Marusic M, Marusic A. Authorship criteria and disclosure of contributions: comparison of 3 general medical journals with different author contribution forms.


Sambunjak D, Ivanis A, Marusic M, Marusic A. Representation of journals from five neighboring European countries in Journal Citation Reports. Scientometrics. 2008;76:193-205.


