

Using Information and Communication Technology to Improve Medical Care

Learning Resource Center Project Gives Clinicians the Tools They Need to Implement Clinical Practices Rooted in Evidence-based Research

Evidence-based medicine has gained wider acceptance around the world as an effective paradigm for improving the quality of care in medical practice. In Russia, however, the concept is not taught in medical schools and the average physician there is, in most cases, unfamiliar with the theory and unable to apply it to his or her own clinical practice. Nonetheless, in recent years, evidence-based medicine has gained a growing number of supporters in Russia and other countries in the region and is being discussed more frequently in the healthcare field.

"This research principle makes it possible to obtain statistically valid data, which precisely fit a given clinical problem. It changes how our doctors think. It can't fail to catch the attention of people who genuinely want to provide the highest level of medical care that is possible today," says Yuri Medyantsev, who clearly knows what he is talking about. As an internist at the Tomsk City Hospital, he is continually striving to apply evidence-based medicine in his every day practice.

For several years, Medyantsev has supplemented his work as a physician by serving as information coordinator at the hospital's Learning Resource Center (LRC), which was established in 2001 under AIHA's Tomsk/Bemidji (Minnesota) partnership. Integrating evidence-based medicine into clinical practice at partnership institutions is the cornerstone of AIHA's LRC project and a key factor in the many successful programs and services introduced by partners throughout Eurasia.

The Internet, medical databases, electronic versions of leading international health and scientific publications—and the ability to make good use of all these resources—are all necessary elements of a successful "practice standard review," an approach that AIHA has introduced to apply evidence-based medicine to specific medical practices. As Medyantsev explains, the



After his working hours in the hospital Dr. Medyantsev comes to the LRC to use its resources for the benefit of his patients' health. (Photo courtesy of Yuri Medyantsev)

point of these reviews is to help ensure that the protocols clinicians follow when providing patient care make the most of limited resources and yield the best possible outcomes. His job as information coordinator is to create a procedure that enables healthcare specialists to find relevant literature on specific problems they face in clinical practice, evaluate the quality of the information found, select the best items, study the content of the selected sources, and then—on the basis of the evidence found—form conclusions and compare them with existing practice. "It is, of course, a lot of work," he admits, "but the results help determine the extent to which one's existing way of doing things is—or is not—in accord with the latest scientific data."

Although the Tomsk/Bemidji partnership officially ended in 2004, the LRC remains dedicated to continually improving the quality of patient care through evidence-based research. Recently, Medyantsev and his colleagues have conducted several reviews on topics of interest to them, mainly concerning pregnant women and nursing mothers. Explaining the reason for this attention to young mothers, Medyantsev says, "In Russia there is no well-defined interaction between obstetricians and internists. As a result, women's post-partum problems do not come to the attention of their district physicians, while the mothers themselves are totally wrapped up in taking care of their new child and don't pay proper attention to their own health."



Yuri Medyantsev, Liliya Zhidkova and Yelena Lushnikova analyze materials found for their evidence-based research on high blood pressure treatment in nursing women. (Photo: Svetlana Krutikova)

Russian medical specialists have tried to solve this problem by setting up obstetrical-internal medicine-pediatric commissions (OIPC) at various primary care institutions. But, Medyantsev notes, for these bodies to work more effectively, district doctors had to acquire additional knowledge in the area of diagnosing and treating the ailments common in pregnant and nursing women. "In the Russian literature, however, most of the available sources present information in the form of prohibitions and the recommendations are based on the opinions of individual specialists without

being supported evidence," Medyantsev points out. "Therefore we decided to study what is done in other parts of the world, compare it with the ideas Russian specialists have, and then present the results in the form of practice standard reviews based on the principles of evidence-based medicine."

For this purpose, hospital staff selected specific topics involving the most common ailments facing pregnant and nursing mothers and the work began in earnest. Real life intervened, changing these plans, however. "I had already begun to collect material for a review on anemia in pregnant women when three nursing mothers in a row came to the clinic with seriously high blood pressure," Medyantsev explains, noting that he did not know how to help these women at first because Russian literature recommends against using drugs to treat such cases. No other information on the topic could be found, so "it soon emerged as the most urgent clinical issue to be researched, and I set out to master it as a way of helping my patients."

Together with two of his colleagues at Tomsk City Hospital, internists Liliya Zhidkova and Yelena Lushnikova, Medyantsev searched the literature in the American Academy of Family Physicians database and Medline. "We were lucky. During that month we had access to full texts of articles from the Journal of Human Lactation and they served as the basis for our review. That was not enough, though. We wanted to have a comprehensive selection of information that contained an evaluation of various studies," he asserts, noting that they found a link to such a review, but had to pay a fee to access the full text of the article. "The problem was not how much it cost, but the fact that we had no way to pay the publisher over the Internet because the credit card system is not yet in use in Tomsk. Luckily, the AIHA partner community helped us." The team sent a request through AIHA's partnership mailing list and just one day later they received the full text of the article from partners in the Czech Republic and the United States.

What needed to happen next was a discussion of the findings with pediatricians and gynecologists, which presented no special difficulties because these specialists take part in OIPC meetings. Moreover, they work in the same building as the internal medicine doctors and see each other regularly. Several mini-conferences were organized as part of the OIPC sessions, including one on the topic of high blood pressure in pregnant and nursing women. The results of the evidence-based research were presented there.

"In our review, we identified the different groups of blood pressure drugs that can be used when nursing, thus demonstrating that our existing practice contradicted the latest scientific data," Medyantsev explains, noting that to date this review is the only source of information on treating hypertension in nursing mothers in Russia. The fact that it exists may have an impact on changing the existing medical practice, as well as on patient attitudes about the problem. He says that the prolonged lack of precise scientific information has produced a serious problem for these mothers—their hypertension remains untreated or they stop breastfeeding.

The consequences are equally damaging, in the first instance to the health of the mother, and in the second to the health of her baby.

Medyantsev and his colleagues are modest about their work, saying that despite the positive results, it would be incorrect for them to say that the new practice is in widespread use, partly because this particular medical problem is fortunately a rare one. "But what we can say for sure," he notes, "is that doctors received information that they didn't have before. When things that once were at a standstill start moving, some inkling of awareness dawns and that in itself is a big success."

The group plans to publish the information they found as a method guide and introduce it nationwide, Medyantsev says. In the meantime, the team continues its work, systematically conducting practice standard reviews.

According to Yelena Lushnikova, this has become a comfortable routine. "Realizing the possibility of applying the latest achievements in international medical science to our own daily work makes doctors interested in evidence-based medicine and its sources. That is bound to affect the process of accepting more advanced solutions and implementing new approaches in their practice," she says, explaining that using the Internet and advanced databases alone represents a significant expansion of horizons for doctors in Tomsk and all of Russia. These newly accessible vistas make them eager for further scientific exploration—and bolder and more confident about their own ability to improve the quality and scope of healthcare services they provide for their patients.



Yuri Medyantsev measures blood pressure to a patient who has hypertension symptoms while providing counseling on its treatment and prevention. (Photo courtesy of Yuri Medyantsev)