QUALITY

ASSURANCE

PROJECT

Using Screening Data to Improve Hypertension Care in Russia

Center for Human Services • 7200 Wisconsin Avenue, Suite 600 • Bethesda, MD 20814-4811 • USA

QUALITY
ASSURANCE
PROJECT

TEL (301) 654-8338
FAX (301) 941-8427
www.qaproject.org

The Quality Assurance Project (QAP) is funded by the U.S. Agency for International Development (USAID), under Contract Number HRN-C-00-96-90013. QAP serves countries eligible for USAID assistance, USAID Missions and Bureaus, and other agencies and nongovernmental organizations that cooperate with USAID. The QAP team consists of prime contractor Center for Human Services (CHS); Joint Commission Resources, Inc. (JCR); and the following entities at the Johns Hopkins University: the School of Hygiene and Public Health (JHSPH), Center for Communication Programs (JHU/CCP), and the Program for International Education in Reproductive Health (JHPIEGO). QAP provides comprehensive, leading-edge technical expertise in the design, management, and implementation of quality assurance programs in developing countries. CHS, the nonprofit affiliate of University Research Co., LLC (URC), provides technical assistance in the design, management, improvement, and monitoring of healthcare systems in over 30 countries.

About this series

The *Case Study Series* presents real applications of Quality Assurance (QA) methodologies in developing countries at various health system levels, from national to community. The series focuses on QA applications in maternal and reproductive health, child survival, and infectious diseases. Each case study focuses on a major QA activity area, such as quality design, quality improvement, communication and development of standards, and quality assessment. Secondary QA activity areas are illustrated in some cases.

Quality improvement is a systematic process of addressing the gaps between current practices and desired standards. Effective approaches to quality improvement include individual problem solving, rapid team problem solving, systematic team problem solving, and process improvement. These methods vary in the time and resources required and the number of people who participate. Regardless of the rigor and intensity of the method used, quality improvement approaches usually share four basic steps:

- Identification of opportunity for quality improvement
- Analysis of improvement area
- Development of possible interventions to address a need for improvement
- Testing and implementation of interventions

Sometimes, when the potential solutions to a problem are clearly defined, a shorter quality improvement activity that focuses on field testing the alternatives is used, as is illustrated in the following case study.

This case study shows how a team based in Tula, Russia, field-tested alternative screening methods for hypertension by following the four basic quality improvement steps.

Acknowledgments

The Russian Ministry of Health implemented the work described in this case study. The case study was written by Ya-Shin Lin and draws from information provided by Rashad Massoud. Diana Silimperi provided technical review.

Recommended citation

Lin Y. 2000. Using screening data to improve hypertension care in Russia. *Quality Assurance Project Case Study.* Published for the U. S. Agency for International Development (USAID) by the Quality Assurance Project (QAP): Bethesda, Maryland, U.S.A.

Using Screening Data to Improve Hypertension Care in Russia

Background

Located southwest of the Moscow region, Tula is one of over 50 Russian administrative regions or oblasts and has a population of approximately two million. The region is rich in agriculture and mining, particularly that of coal and iron, which has made it into an armory and metal working center for all of Russia. Tula has been at the forefront of armaments and defense throughout Russian and Soviet history ever since Peter the Great centralized his small arms production in the region in his effort to strengthen Russia as a European power. In fact, the Russian resistance at Tula is generally viewed as being responsible for blocking the Nazi advance to Moscow during World War II.

However, the fall of the Soviet Union in 1991 signaled a turning point for the region. Scores of weapons factories closed, and the network of work site polyclinics or medsanchasti had to be integrated into the remaining system of clinics and hospitals. In addition, the entire healthcare and insurance system underwent massive restructuring. Since hypertension care had been largely the responsibility of these work site polyclinics, management of care for individuals with hypertension was disrupted during this period. Many patients

simply continued to take previously prescribed medications; others were apparently untreated and even undiagnosed. The region began witnessing a marked increase in the prevalence of complications of uncontrolled hypertension,[1] in the form of myocardial infarctions, strokes, hypertensive crises, and uncontrolled blood pressure. In fact, by 1998, the main cause of adult mortality in Tula was cardiovascular disease, primarily from complications of hypertension. This has been a country-wide pattern; unrecognized and untreated hypertension in Russia has been cited as a major contributor to cardiovascular disease. In turn, cardiovascular disease is estimated to be responsible for one-half of the excess mortality in the Russian Federation, where mortality rates have steadily increased since the 1960s, largely affecting adult males in their most productive years.[2]

In 1998, as part of the continuing USAID Health, Population and Nutrition program in Russia, the Russian Ministry of Health initiated a collaboration to improve the system of hypertension care with the Quality Assurance Project (QAP), the American College of Physicians, and the Agency for Health Care Policy and Research.[3] A Quality Assurance (QA) Steering Committee was created to spearhead and oversee the endeavor, headed by the Director of Health of the oblast, and composed of quality assurance team leaders and senior physicians in the oblast.

The following sections describe how clinic staff improved the system of hypertension care by following the four-step sequence that is common to all quality improvement approaches. They are: identification of opportunity for improvement, analysis of improvement area, development of possible interventions to address a need for improvement, and testing and implementation of interventions.

---

[1] The incidence of hypertension in Tula was estimated 18 per 1000, while the prevalence was 27 percent of the population. This translates to approximately half a million hypertensive patients in Tula Oblast.

[2] Burger, E.J., Jr. 1999. Health and Medicine in the Russian Federation. *The Cosmos Club Journal.*

[3] Government agency, part of the U.S. Department of Health and Human Services.

Identifying the Opportunity for Improvement and Analyzing the Improvement Area

Selection of the process of care to improve. One of the initial meetings of the QA steering committee focused on the identification of key issues and processes in the system of hypertension care that would be addressed. The committee chose screening as one of the first issues to address, since it would enable providers to understand the scope of the problem of hypertension in Tula and thus guide the organization of care and distribution of resources. Figure 1 shows the key areas the committee identified.

Figure 1. Key Issues and Processes to Address in Hypertension Care

- Organization of care
- Resource re-allocation
- Clinical guidelines development
- Health promotion programs
- Screening programs

Discussion on screening methods leading to comparative study. Initial discussions on screening led to the question of how to identify individuals with high blood pressure so they could be enrolled in the hypertension management program. The Deputy Director of Health in Tula favored a screening program that included active community outreach screening. However, as opinions among staff differed regarding this idea, the steering committee agreed to collaborate on a study to investigate the comparative advantages of the two main levels of screening that were discussed, outreach screening and clinic-based screening. The study would provide information to further examine the question of screening method, and it would also identify hypertensive patients and register these patients into the new system of hypertension care. Whatever the method that would eventually be adopted, the study would begin collecting the data that would become, in effect, the initial stage of the future monitoring system for coverage of hypertension care.

Developing Possible Interventions to Address Need for Improvement

Design of a study to compare the effectiveness of two alternative screening methods. To compare the effectiveness of the two screening methods, the QA steering committee chose two single physician practices to carry out the study, where the alternative screening methods would be carried out. General Practice (GP) Office #1 and GP Office #4 were chosen because they catered to populations of similar demographic composition and size, each serving approximately two thousand people.[4] Since the practices served populations of similar socioeconomic backgrounds, there was little reason to expect that the underlying prevalence of hypertension at the two practices would be significantly different.

GP Office #1 was selected as the site for clinic-based screening. Clinic-based screening was defined as measuring and recording the blood pressure of all patients. The patients then received hypertension counseling about the importance of blood pressure measurement and were encouraged to spread this news to friends and family. Health promotion techniques complemented the effort, in the form of a poster in the clinic about the hypertension screening program, a radio interview with a cardiologist, a newspaper article, and efforts by a pre-existing, volunteer self-management committee that included community talks and meetings with community leaders.

GP Office #4 implemented outreach screening, which consisted of all the activities of clinic-based screening, plus a community-based screening effort. For outreach, nurses (with the aid of a town roster) screened the community by visiting all homes door-to-door to measure the blood pressure of all household members over the age of 16.[5]

---

[4] Central planning in Russia assigns one physician for approximately each two thousand people, with a clearly defined catchment area.

[5] To receive healthcare in Russia, one is registered with the specific healthcare facility assigned to one's community. Therefore, each facility has a roster of the population it serves.

Testing and Evaluating the Interventions

Implementation of the two screening methods. The screening study took place in raion[6] Aleksin in early 1999 and lasted for approximately five months. In all cases, when screening resulted in a diagnosis of hypertension, patients were enrolled in the hypertension care program at the local clinic. Over the test period, each clinic recorded the number of patients screened for hypertension and the number of newly diagnosed patients.

First analysis of results. Results were tallied in June 1999. Unexpectedly, the proportion of newly diagnosed hypertensive patients identified via screening was essentially the same in both sites. In GP Office #1, 2.4 percent of the population screened had hypertension, while in GP Office #4, 2.5 percent of the population screened had hypertension. Since the difference was not significant, the QA steering committee concluded that there was no reason to continue outreach screening because it did not yield better results, and the extra effort was unnecessary.

Re-analysis of the data. Some time later, an internal discussion prompted the steering committee to re-examine the information they had gathered from the screening study. Following the more detailed examination of the data, the committee found that, in fact, twice as many patients with hypertension were identified using the outreach screening method (see Table 1). Clinic-based screening at GP Office #1 had covered about one-third of the population served by the office. On the other hand, outreach-based screening at GP Office #4 had covered about 90 percent of the population it served. The greater coverage of the outreach-based screening program led to a twofold increase in the number of newly diagnosed cases of hypertension in GP Office #4.

[6] A *raion* is a district or administrative unit that is smaller than an *oblast.*

Table I. Results of Screening Interventions

	Clinic-Based Screening	Outreach Screening
Population of patients registered with physician[7]	2500	1932
Percentage of patients screened who were diagnosed with hypertension	2.4%	2.5%
Percentage of registered population screened	36.0%	92.6%
Number screened	900	1790
Number of newly diagnosed patients via screening	22	44
Total number of patients in clinic's hypertension program during screening	104	72

Selection of a permanent screening method. Given the further analysis of the data, the choice between the two methods was less clear. The steering committee recognized that active community screening would identify community members who were less likely to use the clinic, in other words, the population of those also more likely to experience myocardial infarctions, strokes, and other related complications. On the other hand, community-based screening was more expensive, since it involved assigning staff for the explicit purpose of screening the population door-to-door. To evaluate the cost-effectiveness of each method, the committee would need to consider the long-term costs of treating chronic conditions associated with complications of untreated hypertension.

[7] Patients under age 16 are not registered with the GP; they are registered with a pediatrician.

Results

"We hardly see any patients with hypertensive crises now."

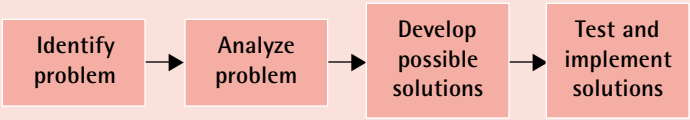
Director of Health, Tula Oblast, nine months after implementation of the screening program

Ultimately, the steering committee elected to adopt a combined screening approach to identify patients for the hypertension management program. They decided to initiate clinic-based screening to identify as many patients in the population as possible with the less intensive approach. A year later, they conducted outreach community screening to identify those patients that were not identified via clinic-based screening. Nine months after implementing the screening program, the committee found there was a 57 percent drop in the number of patients presenting with hypertensive crises at the clinic. The screening program was part of a larger effort that included resource allocation, changes in policy, standards development, health promotion, and changes in the organization of care.

Quality Improvement Insights

This case study illustrates how the four quality improvement steps can be applied when potential solutions have been clearly defined.

Figure 2. The four quality improvement steps.



In addition, the Tula experience demonstrates the importance of selecting indicators that answer health managers' questions. Health systems and providers collect data that answer questions they have, whether for quality improvement, monitoring, or assessment purposes. Questions form the basis for the development of health standards and indicators. In quality improvement, indicators can be used to monitor the effect of an intervention. Therefore, it is imperative that the right questions be asked and that the indicator to measure this effect be clearly thought out and defined from the outset. This means specifying the indicator that will answer the question, i.e., in units of measure, and understanding the limitations of the data, based on the methods used.

The current case study illustrates this point. The first question the steering committee effectively asked was "Which screening method yields the highest proportion of new cases from among those screened?" The question they probably wanted to ask was, "Which screening method yields the highest proportion of new cases from the population registered with each practice?" Or perhaps "Is there a significant difference in the number of new hypertension cases identified using the two methods?"
In this case, the committee could answer the question they were interested in, using data that had already been collected. Had such data not been available, as is often the case with

government facilities in many countries, the data collection effort could have led to inconclusive results. The questions expressed as indicators would look like the ones listed below:

Question	Indicator (%)
Which screening method yields the highest proportion of new cases from among those screened?	$\frac{\text{number of hypertensive cases}}{\text{total population screened}}$
Which screening method yields the highest proportion of new cases from the population registered with each practice?	$\frac{\text{number of hypertensive cases}}{\text{total population registered with (served by) each practice}}$

Using Screening Data To Improve Hypertension Care in Russia: Summary

In 1998, the Russian Ministry of Health collaborated with the Quality Assurance Project to improve the system of hypertension care in the Tula Oblast. As part of this effort, patient screening was identified as an area of focus. To guide decision making on what screening method to use to increase coverage, providers tested two different approaches. When they first examined the results of the testing, they concluded that the screening methods were not significantly different. However, upon closer examination, providers reaized that they had ben using an inappropriate indicator to guide their decision, so they adjusted accordingly. Nine months after the implementation of the new screening effort, providers observed a 57 percent drop in the number of patients presenting with hypertensive crises.