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Improving the System of Care for Neonates Suffering from Respiratory Distress Syndrome in Tver Oblast

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Introduction

USAID/Moscow is funding the Quality Assurance Project (QAP), implemented by The Center for Human Services (CHS), to work in healthcare quality improvement in the Russian Federation. The activities are conducted under the umbrella of the US-Russia Joint Commission on Economic and Technological Cooperation, Access to Quality Health Care priority areas.

Background

In 1997, Respiratory Distress Syndrome (RDS) in the Tver Oblast was the fourth disease by frequency of newborn morbidity and the first disease by early newborn mortality (accounting for 66 percent of premature newborn mortality). Sixty-seven percent of RDS was found to be associated with premature births, the majority of which were associated with Pregnancy-Induced Hypertension. In 1994, mortality of children with RDS was 13 percent, compared to 20 percent in 1997. One problem is that many newborns die prior to arrival at the hospitals because of inadequate care in maternity hospitals, during transportation, and in emergency rooms.

Methodology

The quality assurance approach integrates "improvement knowledge," or quality management with "content knowledge," or subject-matter knowledge. Evidence-based medicine is stressed as the basis of the content knowledge and is used to develop updated clinical guidelines. Quality management uses the systems approach, a team-based problem-solving methodology, a focus on internal and external customers, and the testing of changes for improvement. Indicators of quality are defined and measured before, during, and after the introduction of changes.

Project Design

The five facilities, three urban and two rural, in the project represent all three levels of neonatal care in the Russian Federation. They include maternity, general, and pediatric hospitals, and referral clinics. Multidisciplinary teams-representing the different staff functions involved in each of the facilities-were established. A Steering Committee was created to oversee the project. This consisted of the leaders of the teams in the participating facilities, Oblast senior physicians, and healthcare leaders from Tver Oblast. Technical assistance is provided by the CHS-QAP, consultant neonatologists for CHS-QAP, the Agency for Health Care Policy Research, MedSocEconInform, and the Moscow Institute of Pediatrics and Children's Surgery.

Key Changes Made to the System of Care for Neonates with RDS in Tver

The new system of care has now been redesigned as follows:

- (a) A central referral neonatal unit is being set up at Children's Hospital #1 in Tver City. This unit has neonatal ventilation capability. Neonates suffering from respiratory distress who are in need of referral, from all over Tver Oblast, should be referred to this unit.

- (b) A neonatal ambulance system consisting of four equipped vehicles has been put in place.
- (c) Neonatal resuscitation training has been conducted for pediatricians, obstetricians, midwives, and nurses outside the neonatal referral unit. This system will allow neonates suffering from RDS to be resuscitated, stabilized, and transported to the central unit.

Other key changes made to the system of care for neonates with RDS include the following:

- (a) Clinical guidelines for all stages of the new system of care have been developed.
- (b) Existing "directives" and "methodological recommendations" are being changed in order to facilitate the implementation of the new system.
- (c) Necessary reorganization and resource reallocation have been undertaken to equip and staff the new neonatal center in Children's Hospital #1.

Key Indicators of Quality

The following measures of improvement are currently being tracked in order to demonstrate improvements in the system of care for neonates with RDS:

- (a) Successful resuscitations at maternity hospitals in both urban and rural settings in Tver
- (b) Successful transportation to the referral neonatal unit
- (c) Complications associated with RDS
- (d) RDS mortality rate

Results

In the five hospitals where the redesign of the system of care for neonates with RDS has been developed:

- 93 percent seven-day survival rate after initial resuscitation
- 46 percent increase in neonates transported to neonatal intensive care center (NICU) with normal body temperature
- 63 percent reduction in neonatal mortality due to RDS

Progress to Date and Next Steps

The redesign of the system of care for neonates with RDS has been developed together with the new clinical guidelines. Tver Oblast Health Authority has been able to use its World Bank loan in order to acquire the required neonatal ambulances, incubators, ventilators, and other essential supplies. The new system of care was implemented in the five pilot facilities starting September 1999. Indicators continue to be monitored. The new system of care is currently being expanded to all 42 hospitals, providing neonatal care services throughout Tver Oblast.

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