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### Essay

## Management strategies using non-technical skills to reduce maternal and perinatal morbidity and mortality<sup>☆</sup>

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#### ABSTRACT

Maternal and perinatal morbidity is a public health indicator of the level of equality in a country; actually, a decline in the number of maternal deaths is an indicator of the Millennium Development Goals (MDGs). Furthermore, the practice of obstetrics gives rise to a large number of lawsuits and malpractice penalties. It has been shown in medical care that in addition to the technical skills required to provide adequate patient care on a daily basis, the development of non-technical skills in simulation scenarios, including effective communication tools, exercise and respect of leadership, teamwork and proper resolution of conflicts in the group under critical situations, in this case obstetric emergencies, lower the rates of adverse outcomes for both mother and child. The purpose of this article is to consider from the anesthesiologist perspective, how the implementation of continuous education programs that impact public health policies, in addition to active involvement in the interdisciplinary team caring for the mother and child through public health surveillance activities, and the development of management guidelines in perinatology, may contribute to accomplish these national and world goals.

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### Estrategias de manejo mediante competencias no técnicas para la disminución de la Morbimortalidad Materna y Perinatal

#### RESUMEN

La morbilidad materna y perinatal es un indicador de salud pública que representa uno de los niveles de equidad que existen en un país; actualmente, la disminución de las muertes maternas es un indicador enmarcado en los denominados Objetivos del Milenio. Adicionalmente, la práctica obstétrica genera en nuestro país y el mundo un alto número de procesos médico-legales y pago por mala praxis. En el componente asistencial se ha demostrado que, además de las competencias técnicas que se deben tener para la atención diaria de

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los pacientes, la adquisición en escenarios de simulación de competencias no técnicas, que incluyen herramientas efectivas para la comunicación, asumir y respetar el liderazgo, trabajar como equipo y resolver adecuadamente los conflictos del grupo de atención en situaciones de crisis, en este caso emergencias obstétricas, permiten disminuir desenlaces adversos del binomio madre-hijo. El objetivo de este artículo es crear una reflexión de cómo desde la perspectiva del anesestesiólogo la implementación de programas de educación continua que impacten en políticas de salud pública y la participación activa dentro del grupo interdisciplinario que atiende al binomio madre-hijo en actividades de vigilancia de salud pública y desarrollo de guías de manejo en el área de la perinatología pueden contribuir al alcance de estas metas nacionales y mundiales.

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Reducing maternal and perinatal morbidity and mortality is a public health priority in Colombia and in the rest of the world and is part of the so-called Millennium Development Goals (MDGs) 4 and 5.<sup>1</sup>

### Public health component

Maternal mortality is considered an indicator of a country's social development because it involves aspects related to the organization and quality of health care, the possibility to receive timely medical care and the level of education of the pregnant woman and her family. This indicator is expressed in terms of the number of maternal deaths per every 100,000 live births. The goal established in Colombia was a reduction in maternal deaths to 45 per 100,000 by 2015. Unfortunately, the forecasts indicate that although some improvement has been made, that goal will not be achieved.<sup>2</sup> Our country has made considerable progress in reducing maternal mortality through to the implementation of pioneer and innovative strategies in the area. Mention must be made of the implementation of the so called "surveillance of extreme maternal morbidity" (maternal near miss),<sup>3</sup> based on the identification and analysis of pregnant women who develop serious illnesses but do not die; consequently, the quality of care provided by the health care staff may be then evaluated and this analysis can be used to develop policies for improving the mother and child care services, in addition to identifying any non-medical obstacles (administrative, referrals and contra-referrals) that delay access of pregnant women to health care services.<sup>3</sup> This model developed in Colombia has recently received international recognition and is currently considered the most structured maternal-perinatal approach in Latin America and the Caribbean.<sup>4</sup>

### The medical-legal component

Practicing obstetrics currently equates to performing in "high-risk" industries, such as aviation, nuclear plants, chemical plants or the military industry.<sup>5</sup> Additionally, it represents a considerable medical-legal risk for the health care professional and the obstetrics team. In the United Kingdom, approximately 70% of the fines paid following lawsuits are for obstetric cases.<sup>6</sup> In the United States, 40% of the obstetricians surveyed abandoned the practice of obstetrics because of

medical-legal issues and those who are still practicing obstetrics have increased their requests for diagnostic tests, fetal monitoring and interventions such as cesarean section, with a view to protect themselves against any legal actions.<sup>7</sup> In another study, the American College of Obstetrics and Gynecology (ACOG) documented that 90.5% of the obstetricians in the country have been sued; in 2010, \$1,055,222 dollars were paid as indemnities for neurological development deficit in live births and, despite the increase in the number of C-sections, the incidence of infant cerebral palsy has not declined.<sup>8</sup> During the last ten years in Colombia (data provided by the Special Fund for Assisting in case of Lawsuits FEPASDE), the practice of obstetrics has been among the first three specialties more usually sued and in our country these legal actions entail civil, ethical and criminal aspects and involve the whole team that provided medical care to the mother and child, as well as the institutions where care was provided.

### Health care component

Taking care of a woman in labor is an interdisciplinary experience involving obstetricians, nurses, midwives, pediatricians and anesthesiologists. The time elapsed since the onset of labor until birth may involve several shifts of caregivers and it has been shown that mistakes are usually made as a result of team failures rather than individual failures. A study on adverse events published in 2004 by the Joint Commission revealed that adverse outcomes in labor, particularly affecting the newborn, are not due to deficiencies in medical expertise, but rather to communication issues, follow-up, leadership, team work and conflict resolution regarding non-technical skills. The recommendation was that institutions should train their work teams in non-technical skills using simulation scenarios and team exercises in case of crisis situations in obstetric emergencies, with a view to providing safe care and prevent adverse outcomes for the mother and child.<sup>9</sup> The most frequent obstetric emergencies are the result of maternal-perinatal morbidity and mortality, including postpartum bleeding, hypertensive crisis, severe infections, thromboembolisms, fetal distress during delivery and management of dystocic labor; such emergencies are unavoidable and what is critical is to train the health care team to respond in a coordinated, timely, effective, ethical and moral manner; taking courses in the management of obstetric emergencies with the sole purpose of meeting

certification schedules, passing an exam, obtaining a certificate, is not enough to impact the health care professional practice or changing the patient's outcomes.<sup>10</sup> This is why a new approach to adult training is recommended, not just to learn and develop manual skills (technical competency) but to learn non-technical skills including effective tools to use in situations of crisis, in this case obstetric emergencies, so that the work team enjoys effective communication, accepts and respects leadership, team work and proper solution of conflict; moreover, training should assess the impact on clinical staff and on the improvement of outcomes at the institutional, state and national level. Systematic literature reviews conclude that simulator-assisted training of the interdisciplinary team in obstetric emergencies may help in preventing errors and improving safety in the management of both mother and child; however, prior to adopting this strategy, cost effectiveness studies are required.<sup>11</sup> Training programs in obstetric emergencies may improve quality of care. Public health policy-makers should include evaluation programs and their impact in their budgeting exercise.<sup>12</sup>

### The role of education

Very few certification training programs in obstetric emergencies document their impact on the improvement of technical and non-technical skills, and the improved outcomes from changes in the usual clinical practices in mother-child care worldwide. Some examples are programs such as MOET (Managing Obstetric Emergencies and Trauma), MOSES (Multidisciplinary Obstetric simulated Emergency Scenarios), ALSO (Advanced life support in obstetrics), STORC (State Obstetric and Pediatric Research Collaboration), and TPP (Team Performance Plus). Actually, just one international certification course – MORE OB (Managing Obstetrical Risk Efficiently) documented the lower numbers of medical malpractice lawsuits in addition to the improved competencies of the participants.

In Colombia, the Colombian Society of Anesthesiology S.C.A.R.E., with the support of FEPASDE's promotion and prevention program and together with scientific societies of the disciplines involved in maternal-child care, and national and international agencies (United Nations Fund for Population Activities – UNFPA) developed the Course for the Enhancement of Competencies in the Management of Obstetric Emergencies, called *Colapso Materno*<sup>®</sup>.<sup>13</sup> During the past 6 years this program has helped to improve the maternal and perinatal outcomes and has shown a decline the number of medical-legal actions and payment of penalties by obstetricians, in addition to the “maternal near miss surveillance” pioneer strategy, as a public health strategy developed in Colombia. The *Colapso Materno*<sup>®</sup> Course has had international impact and has been presented throughout the Latin American continent, including countries such as Costa Rica, Guatemala, El Salvador, Honduras, Panama, Peru, Chile and Venezuela, among others.

In addition to education, the obstetrics anesthesia committee of the Colombian Society of Anesthesiology, S.C.A.R.E., actively participates in the local and national committees for the analysis of maternal perinatal morbidity-mortality and

acts in an advisory capacity in the development of clinical practice guidelines in the area of delivery care and obstetric emergencies.

### Final reflection

The strategies aimed at reducing maternal and perinatal morbidity and mortality are a priority for public health policies around the world; obstetrics is considered a high risk practice, with a high percentage of lawsuits and payments of medical-legal actions that affect the interdisciplinary team and the institutions providing maternal-child care.

The development of educational strategies for a work team performing according to a protocol and in an organized manner whenever an obstetric emergency crisis occurs is highly recommended; however, these proposals must be able to show an improvement in the number of adverse maternal-perinatal outcomes and a decline in medical-legal actions.

The committee of obstetric anesthesia of the Colombian Society of Anesthesiology S.C.A.R.E. has a multidisciplinary approach to actively participate in the development of the *Colapso Materno*<sup>®</sup> program and is asked to participate in an advisory capacity in the development of delivery care policies and guidelines for critical situations of pregnant mothers and their babies.

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### Conflict of interest

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