



THE AMERICAN COLLEGE OF OBSTETRICIANS & GYNECOLOGISTS

Committee on American Indian/Alaska Native Women's Health

Recommendations to the IHS from the Rural Maternal Safety Meeting

The multidisciplinary Rural Maternal Safety working group met on August 4, 2014 to develop recommendations for ensuring safety in low birth volume facilities. The following are the recommendations to the Indian Health Service (IHS) based upon the extensive breadth and depth of the experience of the nationally recognized participants in the provision of skilled maternity and newborn care in rural and remote settings such as at a number of the smaller IHS and Tribal hospitals and clinics.

1. Collaboration:

Safe, high quality care begins with a team effort by all participants including but not limited to: Nursing, Family Medicine, Obstetrics/Gynecology, Nurse Midwifery, Pediatrics and Anesthesia. Therefore, coordinated care across all specialties is essential in order to assure safe maternal care. This includes coordinated care with designated regional referral centers, appropriate use of midwives, and advanced training for family practice physicians and others with obstetric privileges. Team training focused on nursing and providers and integrating patient safety tools such as Advanced Life Support in Obstetrics (ALSO) and Managing Obstetrical Risk Efficiently (MORE^{OB}) should be required for the collaborative teams. The use of a common accessible medical record across systems and facilities is essential to assure the ability of providers to coordinate optimal obstetric care in all settings.

The creation of a multidisciplinary MCH committee at each site offering maternity care is highly recommended. These committees can oversee clinical policies, interdisciplinary education, patient safety initiatives, case management services, and periodic review of birth and newborn outcomes including adverse events. Promotion of safe maternity care is an ongoing process. Rural maternity care units should work with regional groups including state perinatal collaboratives, other local rural maternity care units, and regional referral centers to assure optimal birthing experiences and outcomes for all patients.

National leadership should be provided through appointment of a clinician to be the Maternal and Child Health Coordinator at Indian Health Service Headquarters. The MCH coordinator should communicate directly with MCH leadership at each maternity care unit. Rural maternity care units will need adequate funding to participate in collaborative efforts such as sending clinicians and nurses for training at regional centers and attendance at national courses to facilitate the required maintenance of a high level evidence based practice.

2. Prenatal Care:

Prenatal care should be culturally sensitive and involve anticipatory guidance and on-going risk assessment that is supported by active case management and consultation with regional specialists, as appropriate. Based on our experience of providing evaluation, clinical care, and consultation for obstetrical services at Indian Health Service and Tribal sites, we find that patients are more likely to seek prenatal care when it is available locally and that patients who are treated within the community have better outcomes. Therefore we emphasize the importance of offering quality prenatal care across the system, whether or not intrapartum care is offered at the local facility.

One evidence-based model for high quality prenatal care is group prenatal care, specifically “Centering Pregnancy.” In a group pregnancy model, individual prenatal care is generally conducted with ten 2-hour prenatal group sessions with 8 to 12 women who share similar due dates; however, variations that include perpetual models of fewer women for programs which have a limited prenatal care census are workable. The sessions comprise prenatal health assessment and education, begin at 12 to 16 weeks of pregnancy, and conclude in the early postpartum period. Within a group space, women are an important part of their own prenatal care by learning self-care skills that include measuring their own blood pressure and weight, which they record in their medical record. They receive individualized physical assessment from their prenatal care provider. The women then meet together as a group to discuss issues around the content of pregnancy, childbirth, and parenting in which health care team members and clients actively contribute.

Integral supports to prenatal services for women in the rural setting are the involvement of nurse case managers (CMs), public health nurses (PHNs), community health representatives (CHRs), and the diabetes team. Active case management should identify maternal and fetal risk factors and coordinate services to assure that national standards of care for specific conditions are met. Nurse case management services facilitate efficient coordination of care and provide additional support to individual high-risk patients who

may need referral to multiple specialists and/or delivery at outside facilities. Postpartum follow-up should also be assured. Ongoing review of high risk patients and support of active case management is an essential function of the multi-disciplinary MCH team and should be addressed at regular team meetings, which should typically be held on a monthly basis.

Public health nurses can be involved in perinatal care by assessing family health needs and strengths, identifying problems influencing the health care of the pregnant woman (or family as a whole), and taking action to address these issues. As members of the prenatal care team, the role of public health nurses is directed toward promoting the health of pregnant women and families. To this end, public health nurses work in partnership with pregnant women to assess and identify unmet health needs and offer services to promote a healthy pregnancy and support improved health outcomes for children and families.

Community health representatives (CHRs) can ably connect underserved populations with health and human service providers. CHRs do not provide clinical care or replace other health care providers. Instead, they complement services delivered through the more formal health care network. Community health workers provide essential outreach, education, referral and follow-up, case management, advocacy and home visiting services to women who are at highest risk for poor birth outcomes. Their focus early is on getting pregnant women into early and consistent prenatal care and then later assuring appropriate postpartum care including support for breastfeeding.

The diabetes team provides health information and guidance for women who have pre-existing diabetes or develop gestational diabetes. Their services enable women to receive necessary services within the community when appropriate. These services often decrease burdens related to time away from home and family and they reduce the cost of travel for regional services when such care can be safely provided in the community.

3. Regionalization of Maternity and Newborn Care:

Based upon well documented outcomes data, regionalization of care is endorsed by this workgroup and very highly recommended to the IHS. The goal of regionalized maternal care is for pregnant women at high-risk to receive appropriate care in facilities with providers who are prepared to provide the required level of specialized care. Women at low risk could opt to receive their care closer to home.

Regionalized care should facilitate communication and the coordination of care between providers. Coordinated care will allow some of a patient's prenatal care to be provided close to home. It should also facilitate the transfer of care when the need arises. The system must be designed with the consideration of the medical and cultural needs of the population, the geography of the region, existing patterns of care, and the availability of medical resources and training. The IHS National and Area MCH Coordinators must maintain active roles in regional quality assurance and on-going mentoring for providers and nurses.

Regionalized maternal care would introduce uniform designations for levels of care that address maternal health needs, and complement but remain distinct from neonatal levels of care. Regionalized maternal care would also develop standardized definitions/nomenclature for facilities providing each level of maternal care. It would provide consistent standards according to level of maternal care for use in quality improvement and health promotion. Transportation needs, both routine and emergent, within the region also need to be addressed. An excellent model for regionalized care is the well-established program developed by the Arizona Perinatal Trust which is endorsed by this workgroup.

A useful and widely tested classification system for levels of maternal care is:

- In-hospital **Birthing Centers**, which provide hospital services for uncomplicated obstetrical patients (excluding cesarean delivery) and basic and transitional newborn care; such centers should not electively deliver infants less than 37 weeks gestation. Those IHS rural hospital-based maternity care programs without cesarean delivery capability are most appropriately categorized as in-hospital or low-risk birthing centers.
- Perinatal care centers: **LEVEL I (Basic Care)** – which provide hospital services for low-risk obstetrical patients, including cesarean delivery and basic and transitional newborn care; such Centers should not electively deliver infants less than 36 weeks gestation. A number of medium-sized and appropriately staffed and resourced IHS and Tribal hospitals are Level I facilities.
- Perinatal care centers: **LEVEL II (Specialty Care)** - which provide hospital services for selected high-risk obstetrical patients and newborns requiring selective continuing care; such centers should not electively deliver infants less than 32 weeks gestation. Several of the largest, appropriately staffed and resourced IHS and Tribal hospitals qualify as Level II facilities.
- Perinatal care centers: **LEVEL III (Subspecialty Care)** - which provide hospital services for high-risk obstetrical patients and newborns requiring selective continuing care; such centers should not electively deliver infants less than 28 weeks gestation.

- Perinatal care centers: **LEVEL IV (Regional Perinatal Health Care Centers)** - which provide hospital services for all obstetrical and newborn patients including those patients requiring subspecialty and intensive care at all gestational ages.

Note: Please refer to the attached *Obstetric Care Consensus on Levels of Maternal Care* published by the American College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine in February 2015 for more detailed information about levels of maternal care in a regionalized health care system.

4. **Low Risk IHS and Tribal Rural Birthing Centers**

IHS and Tribal low risk rural birthing centers are defined as maternity facilities without cesarean delivery capability. They each should have the following systems in place in order to help assure optimal maternity care outcomes:

- In low birth volume settings, concentrate the obstetric and neonatal experience by having two providers at a delivery so as to assure an appropriate experience level required for the care of any given patient. Two providers per delivery will enhance the provider experience and the patient safety. A minimum of 30 deliveries in 2 years is required for Physicians, Certified Nurse Midwives (CNMs), and Registered Nurses (RNs) to maintain competence.
- In low birth volume settings, see the Nursing standards described below.
- If necessary to maintain volume and skills, staff should be assigned and funded to rotate to larger regional facilities so that the requisite knowledge and skills can be practiced and mastered.
- A structured enhanced orientation program should occur immediately for new staff. It should include local and regional practices and standards, both for new clinician and nursing staff, so as to assure the required core competency to provide safe maternity and newborn care.
- All staff should actively participate in structured practice drills at least on a quarterly basis. See section on skills and training, below.
- All low risk maternity centers must be part of an integrated delivery system with ready access to prenatal, intrapartum and postpartum consultation and referral when needed.
- An arrangement must be in place where women needing truly emergent operative delivery (e.g. placental abruption, cord prolapse, category 3 fetal monitor tracing) can be immediately transported

by the most expeditious means without delay to an accepting physician and facility, in accordance with the already fully established regional perinatal care plan.

- Low risk birthing centers must have available essential obstetric medications and supplies such as magnesium sulfate, antenatal corticosteroids, tocolytics, blood banking (including at least 4 units of O-negative blood) and ready access to at least limited labor and delivery obstetrical ultrasound.

5. Nurse Staffing Requirements:

Proper nurse training and staffing are crucial factors in the assurance of safe maternity care at low volume birth facilities. The dynamic processes of pregnancy, labor, birth, and the early postpartum period require intensive nursing effort to assure safe outcomes for women and their babies. The American Nurses Association's (1999, 2005) Principles for Nurse Staffing specify that the type of patient and clinical situation are key for determining the nursing effort and the number of nurses needed to provide safe care. The AWHONN Guidelines for Professional Registered Nurse Staffing for Perinatal Units (AWHONN, 2010) cite 31 types of patients or clinical situations and make recommendations about the numbers of nurses needed in these situations.

The working group urges adoption by the IHS of the AWHONN (2010) Registered Nurse (RN) staffing guidelines that every birth be attended by 2 RNs, one of whom is skilled in newborn resuscitation. NRP certification for such nurses is recommended by this committee. Other recommendations that should be followed are a 1 RN to 2 women ratio for women receiving cervical ripening agents and women laboring without complications. A 1 RN to 3 mother/baby couplets is recommended for mother/baby units. For women who have stable antepartum complications, 1 RN may care for 3 women. The recommendation for nurseries is 1 RN to 3 to 4 normal newborns (AWHONN 2010).

In addition, the working group recommends that facilities follow the AWHONN (2010) staffing guidelines which are a nurse staffing ratio of one RN to one woman in the following situations due to the complexity of the care required:

- Initial RN triage
- Women with unstable antepartum complications
- First hour of IV magnesium sulfate administration
- Women with medical (such as diabetes, pulmonary or cardiac disease, or morbid obesity) or obstetric (such as preeclampsia, multiple gestation, fetal demise, indeterminate or abnormal

- FHR pattern, women having a trial of labor attempting vaginal birth after cesarean birth) complications during labor
- Women receiving oxytocin in labor
 - Women desiring a birth with minimal interventions and/or when the fetus is being monitored through intermittent auscultation
 - During the initiation of regional anesthesia and for 30 minutes following the initial dose of anesthesia, until the woman's condition is stable
 - During the active pushing phase of the second stage of labor
 - For the woman during the immediate recovery period after vaginal or cesarean birth until the woman's condition is stable and critical elements of care have been met for the woman
 - For the newborn during the immediate period after vaginal or cesarean birth until the baby's condition is stable and critical elements of care have been met for the baby
 - Newborn circumcision during the pre, intra and immediately post-operative period

The availability at all times of adequate numbers of appropriately trained RNs to provide timely care and assist in the management of obstetric complications is essential. AWHONN's Guidelines for Professional Registered Nurse Staffing for Perinatal Units (AWHONN, 2010) state that minimum nurse staffing "refers to the minimum number of RNs required to be on the unit (or in-house with a patient assignment that can be quickly handed off to another RN so the perinatal RN can return to the unit immediately) to be ready to care for women who may present for care when there are no perinatal patients." The AWHONN guidelines recommend that all birthing facilities have at least 2 RNs in-house and available to care for pregnant women presenting for care even when there are no perinatal patients in house. This is to ensure adequate nursing staff in the case that a pregnant woman presents with an obstetric emergency which may require a cesarean (AWHONN, 2010). In a facility that doesn't have cesarean ability, we recommend that there should be at least one RN in house and one on call. One of the 2 RNs should have the skills to care for newborns who may develop complications and/or need resuscitation.

Nurses with perinatal expertise may be cross-trained to a variety of other areas of the hospital to maximize in-house availability and allow for productive time when there are no perinatal patients in house. A contingency staffing plan, which may include an on-call system, is recommended for units of all sizes to cover situations when nurse staffing becomes inadequate (TJC, 2010a).

Perinatal staffing should take into account that an RN is caring for both a woman and her fetus(es), although the woman is counted as one patient. Nurses caring for newborns, whether on mother/baby units or in the

nursery, are caring for patients who cannot speak and who are just learning to eat. The educational needs of new mothers and their families are significant and requirements for newborn testing and maternal discharge education are increasing regularly. The acuity of patients must also be considered when planning and evaluating nurse staffing. Women in the U.S. experienced a 75 percent increase in maternal morbidity from 1998/1999 to 2008/2009 (Callaghan, Creanga & Kuklina., 2012). Co-morbidities, including obesity, substance use, social/family stress and intimate partner violence, complicate a significant number of pregnancies, increasing the intensity of needed nursing care.

Staffing determinations should also take into account RN factors, such as the experience and skill mix of the nursing staff, and systems factors, such as the physical design of a patient care unit and the availability of ancillary support to perform non-nursing duties (Bingham & Rhul, Accepted for publication in JOGNN – the article will probably be online in January). More nurses may be needed if there is not ancillary support. Decisions about perinatal nurse staffing should also factor in the potential for turbulence in terms of admissions, transfers and discharges and for significant fluctuation in the patient census, even in small-volume units.

Therefore we urge that two RNs are present at each birth, with at least one of the two RNs being an NRP-qualified nurse. We recommend the facility leadership strongly support inter-professional relationships to ensure that nursing is recognized as a vital component of the team. We also make the following education recommendations for nurses working in maternal care: Their orientation should be Perinatal Orientation & Education Program© (POEP) equivalent and they should have prior obstetric experience. If they do not have prior obstetric experience they must complete perinatal education – POEP or equivalent, ALSO certification or equivalent, and NRP training. Their on-going volume, like for the other providers, should include at least 30 deliveries in 2 years. In cases where the women become high risk, AWHONN's staffing guidelines can become an important resource.

6. Clinical Case Reviews:

Efforts to reduce maternal morbidity and mortality must include clinical case reviews by the professional staff at every birthing facility in the United States. Several organizations have collaborated nationally on how to conduct an effective case review along with suggested templates and guidelines. In addition, an updated sentinel event policy will be released by the Joint Commission on January 1, 2015 that will adopt

severe maternal morbidity as a sentinel event requiring birth facilities to report the event and do a root cause analysis.

Rural birth settings face unique challenges that may make the case review process more difficult given low volume, limited staff/resources and geographical constraints. The following recommendations are suggestions and modifications of national proposals that may better serve IHS and Tribal sites. The use of a systematic standardized format for case review is crucial in reducing maternal morbidity in all settings.

- What events should be reviewed?

An event that occurs intrapartum through the immediate postpartum period that requires the transfusion of 4 or more units of blood and/or admission to the intensive care unit (ICU) if available and/or transfer of the patient to a tertiary care facility. Cases with an unexpected and severe medical event should also be reviewed as should all cases of stillbirth, intrauterine fetal demise, neonatal admission or transport to a NICU or five minute Apgar < 7.

- When should the review occur?

The review of adverse events should occur as close as possible to the time of the event, ideally within one week. For patients transferred out to a higher level facility it may be difficult to coordinate the review, but every effort should be taken to have the review occur with both facilities via phone or web based conferencing.

In rural settings with low volume, it is suggested that the MCH collaborative team of obstetric and nursing providers meet monthly and that all adverse events and near misses be addressed by this committee.

- Who should review the case?

The entire collaborative team involved in the care of the patient, including the outside team members if the patient was transferred to another facility. The review should include the prenatal care record when indicated by the nature of the clinical outcome. The IHS site should partner with the staff of regional perinatal center to participate in the review process and include them as part of the monthly meetings. Using phone or web conferencing may enable a more multidisciplinary team to be involved in the case reviews.

- How to conduct a case review?

Gather all past and current patient medical records and facility records regarding the patient and event. If the patient was transferred, a member from the outside facility should also gather the appropriate information. A pertinent synopsis of the event should be prepared and objective information should be abstracted on the abstraction form. (Sample templates can be found at <http://www.safehealthcareforeverywoman.org/get-smm-forms.php>)

The team should follow a standard format and approach to the review using the Assessment of Severe Maternal Morbidity checklist with discussion of the patient factors, analysis and action taken. A scale of 1 to 4 can be used for each factor to comment on the degree to which each factor may have contributed to the morbidity/mortality. The review should conclude with recommendations and action items on how to prevent such events in the future.

7. Skills and Training:

All members of the collaborative team should have appropriate training in Maternal-Child Health. This means inclusion of maternity and/or neonatal care in their core educational program as well as ongoing experience and education to maintain competency. Providers should not be responsible for patients they are not trained to care for (e.g. a Pediatrician should not be managing a laboring patient). In general CNMs, Family Medicine physicians and/or Ob/Gyn physicians should provide intrapartum maternity care. Neonatal care is typically provided by CNMs, Family Medicine physicians and/or Pediatricians.

The working group very strongly recommends that all members of the collaborative team involved with intrapartum care have current ALSO (or equivalent) and NRP certification, and have completed the AWHONN Fetal Monitoring (FM) Course (or equivalent). All nurses working in maternal care should complete Perinatal Orientation & Education Program© (POEP) (or equivalent) and should have prior obstetric experience. In addition, Advanced Cardiac Life Support (ACLS) certification is encouraged as additional training for maternity care providers and required when there is not immediate access to an onsite physician who is skilled in maternal resuscitation (e.g. anesthesia, emergency room).

In addition to the ongoing certifications, all members of the intrapartum team should participate in a minimum of 30 deliveries every two years. In smaller facilities with low delivery volumes team members may need to travel to larger centers for this experience.

It is essential that appropriate resources must be provided to ensure all team members can complete these requirements. This will include adequate scheduled time to complete the requirements, financial support and time off for travel if necessary, and payment of fees for required courses.

In addition, simulations, hands-on training, rounds, and drills must be regular, integral parts of the team training program. The working group recommends requiring all staff (physicians, midwives, nurses, anesthesia staff, and blood bank staff) to participate in simulation and mock drills at least on a quarterly basis.

Types of drills in the regularly scheduled curriculum and repeated on at least an annual basis for all staff include:

- Severe hypertension/eclampsia
- Postpartum hemorrhage
- Prolapsed umbilical cord
- Shoulder dystocia
- Fetal heart rate tracings requiring urgent delivery
- Maternal collapse (pulmonary embolism, amniotic fluid embolism, myocardial infarction)
- Uterine inversion

Adaptable, realistic, and highly effective scenarios for such drills are nationally available and can be provided to the IHS and Tribal providers upon request. Further, they form the essential basis for the curricula for such contemporary courses as Advanced Life Support in Obstetrics (ALSO) and Managing Obstetric Risk Efficiently (MORE) as described in this report.

8. Conclusion:

This report represents recommendations of the national multidisciplinary working group that was convened in consultation to the Indian Health Service to assure optimal outcomes of obstetric and neonatal care in rural IHS and Tribal health care settings. The working group acknowledges that these are the initial steps and a foundation towards making maternal care in rural remote settings safe for women and their children. We look forward to the continued dialogue and development of these recommendations with the IHS. We also note that much of the information in this report can be extrapolated to other rural and global areas

facing similar circumstances such as in the IHS. The multidisciplinary working group looks forward to continuing its efforts in these areas as well.

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