

JOINT STATEMENT

International *WHO Recommendations on Interventions to Improve Preterm Birth Outcomes*

A Commitment to Action from Professional Health Organizations

This International Joint Statement was reviewed and endorsed by the Council of International Neonatal Nurses (COINN), the International Confederation of Midwives (ICM), the International Council of Nurses (ICN), the International Federation of Gynecology and Obstetrics (FIGO), and the International Pediatric Association (IPA). This statement was also reviewed and endorsed by the American Academy of Pediatrics (AAP), the American College of Nurse-Midwives (ACNM), and the American Congress of Obstetricians and Gynecologists (ACOG). This statement was developed by USAID's Every Premie-SCALE project and the Global Alliance to Prevent Prematurity and Stillbirth (GAPPS).

Background

The Council of International Neonatal Nurses (COINN), the International Confederation of Midwives (ICM), the International Council of Nurses (ICN), the International Federation of Gynecology and Obstetrics (FIGO), and the International Pediatric Association (IPA) are the lead international professional organizations supporting global efforts to improve preterm birth outcomes. Their missions share common themes of improving the health of mothers and newborns worldwide, particularly for the most vulnerable, such as preterm newborns. Along with national professional organizations, these international professional organizations promote evidence-based, effective practice that can improve preterm birth outcomes around the world.

Preterm babies are prone to serious illness or death during the intrapartum and neonatal period. With appropriate treatment and care, survival of preterm newborns can be improved, while reducing the risk of lifelong disability and poor quality of life. Complications of prematurity are the single largest cause of neonatal death and currently the leading cause of death among children under 5 years. Therefore, global efforts to reduce child mortality demand urgent action to address preterm birth.

Based on review of the available evidence, the listed professional organizations agree that infant death and morbidity following preterm birth can be reduced when key interventions are applied within a continuum that integrates management of women at risk of imminent preterm birth with adequate postnatal care of preterm infants. Childbirth and newborn care are based on a foundation of essential maternal and newborn care, upon which specialized care is built to address complications as they arise. This joint statement affirms the commitment of professional organizations to implement World Health Assembly resolutions: the Global Strategy for Women's, Children's and Adolescents' Health (A69/A/CONF./2) and the Every Newborn Action Plan (WHA67.10).

WHO Recommendations on Interventions to Improve Preterm Birth Outcomes

The listed professional organizations support the 2015 *WHO Recommendations on interventions to improve preterm birth outcomes*. The *WHO Recommendations* highlight ten evidence-based maternal and newborn care specialized interventions that can be provided during pregnancy, labour and delivery, and the postpartum period for preterm newborns that are at high risk of morbidity and mortality. The document provides specific

recommendations for the management of imminent preterm birth and preterm infants, and is intended to inform the development of health-care protocols and policies related to interventions to improve preterm birth outcomes. It is not intended to provide a comprehensive practical guide for the management of preterm labour and preterm infants. Feeding and infection management recommendations are made in separate WHO recommendations. Recommendations on interventions to prevent and reduce the risk of preterm birth or modify risk in at-risk pregnant women are also outside the scope of these recommendations.

In certain low-resource settings, maternal and newborn health-care services remain inconsistent and inadequate, thus compromising the safe use and effectiveness of preterm birth interventions. Basic essential newborn care (indicated resuscitation, appropriate feeding, thermal management, hygiene/infection prevention) underpins survival of all newborns. The technological context of care must be considered and potentially improved prior to instituting more specialized interventions to critically ill neonates. For example, the ability to appropriately monitor oxygen saturation and cardiorespiratory status is recommended and encouraged for respiratory interventions, such as supplemental oxygen, continuous positive airway pressure (CPAP) or ventilator support, in less developed medical settings as some beneficial interventions also have the potential to lead to harm. A careful interplay of health interventions and the level of available care are critical to ensure that the recommended interventions have the intended effect.

The following issues should be considered before applying the *WHO Recommendations*:

- Local protocols should be developed that integrate the management of women at risk of imminent preterm birth and preterm infants within a continuum, with due consideration for contextual factors that influence preterm newborn survival;
- Careful attention should be paid to dating of pregnancy with the best method available during early antenatal care visits;
- Health-care staff should be trained on how to determine the best estimate of gestational age and clinical features of imminent preterm birth;
- Local arrangements should be made to ensure ample and consistent supplies of antenatal corticosteroids (dexamethasone or betamethasone), magnesium sulfate and antibiotics (macrolide or penicillin);
- Consideration should be given to all aspects of the quality of maternal and newborn care at the health-care facility level; and
- Clear referral pathways for women at risk of imminent preterm birth should be established within the health-care system.

Commitment to Action

The *WHO Recommendations* promote high quality of care and improved outcomes by providing guidance on the delivery of evidence-based interventions related to preterm birth. In this regard, national professional associations have an important and collaborative role to play in assisting countries in an ongoing process to update their policies, programme materials and activities to support the safe and effective implementation of these new recommendations, including the following actions:

- Engage national obstetric, paediatric, family medicine, nursing and midwifery associations to update their members on the new *WHO Recommendations* and the evidence basis for each recommendation (e.g. at annual meetings, through newsletters, in continuing medical education sessions);
- Develop local protocols that integrate the management of women at risk of imminent preterm birth and preterm infants within a continuum, with due consideration for contextual factors that influence preterm newborn survival;

- Review/update guidelines, pre-service educational materials and in-service training materials to ensure that materials reflect the new *WHO Recommendations*;
- Work with and support national planning and strategy processes, ensuring alignment with the Every Newborn Action Plan and the Global Strategy for Women’s, Children’s and Adolescents’ Health;
- Promote the use of existing platforms and develop new approaches to strengthen health worker skills and staffing numbers to implement the *WHO Recommendations* (e.g. continuing medical education, pre- and in-service training);
- Promote quality improvement approaches and processes for health care during pregnancy, labour and delivery, and the postpartum period with a focus on overcoming key health system and care barriers;
- Use maternal and perinatal death audits in facilities to identify outdated practices that may be harmful and plan for actions to improve adherence to *WHO Recommendations*;
- Strengthen availability and quality of a minimum set of data to support clinical decision-making, programme management and quality improvement efforts including tracking simple process of care and outcome indicators aimed at improving preterm birth care and outcomes;
- Improve health literacy of families and increase provider and community awareness of the signs of threatened preterm birth, and the importance of early care seeking and referral to the appropriate level of care;
- Review and update facility and community health worker referral pathways for women at risk of imminent preterm birth, and following birth, to improve access to the appropriate level of care for pregnant women and preterm newborns; and
- Support these recommendations through the design and implementation of programmes with a strong evaluation component, and engage in research on new/refined interventions and implementation strategies and approaches specific to the local context.

Highlights of Recommended and Non-Recommended Practices to Improve Preterm Birth Outcomes

FOR WOMEN AT RISK OF IMMINENT PRETERM BIRTH

Recommended

- Antenatal corticosteroids (ACS) from 24 to 34 weeks in eligible women, provided certain conditions are met: accurate gestational age assessment, identification of imminent birth, no clinical evidence of maternal sepsis, adequate childbirth care is available (including the capacity to recognize and manage preterm labour and birth), and the preterm newborn can receive adequate care (including resuscitation, thermal care, feeding support, infection treatment and safe oxygen use);
- Antibiotics for preterm prelabour rupture of membranes; and
- Magnesium sulphate (MgSO₄) for fetal neuroprotection <32 weeks if preterm birth is likely within 24 hours.

Not recommended

- Tocolysis for the purpose of improving neonatal outcomes;
- Antibiotics for preterm labour with intact membranes; and
- ACS in women with confirmed chorioamnionitis likely to deliver preterm.

FOR PRETERM NEWBORN

Recommended

- Thermal protection to include kangaroo mother care/skin-to-skin contact when infant weighs 2,000 g or less and is clinically stable;

- Monitoring oxygen saturation and cardiorespiratory status when using any respiratory intervention (including supplemental oxygen, CPAP or ventilator support) is advisable. The ability to provide this level of care should be considered in the decision to use respiratory interventions;
- CPAP for preterm infants with respiratory distress syndrome (RDS);
- Surfactant for preterm infants with RDS in facilities meeting minimum criteria; and
- Start oxygen therapy with 30% oxygen or air (if blended oxygen is not available) during resuscitation and ventilation of preterm infants born <32 weeks and titrate per defined criteria.

Not recommended

- Prophylactic surfactant before diagnosis of RDS; and
- Starting 100% oxygen during ventilation of preterm infants born ≤32 weeks.

The WHO Recommendations, the supporting evidence review, and a summary policy brief are available at: http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/preterm-birth-guideline/en/

Additional Supporting Organizations

Additional organizations that may wish to endorse this statement are encouraged to add their organization’s name to the list of supporters.

REFERENCES

1. WHO. 2015. *WHO Recommendations on interventions to improve preterm birth outcomes*. Geneva, Switzerland: World Health Organization. Retrieved from http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/preterm-birth-guideline/en/.
2. The Partnership for Maternal, Newborn and Child Health in support of Every Woman Every Child (PMNCH). *Strategic Plan 2016-2020*. Geneva, Switzerland: PMNCH. Retrieved from http://www.who.int/pmnch/knowledge/publications/pmnch_strategic_plan_2016_2020.pdf.
3. WHO, UNICEF. 2014. *Every Newborn: an action plan to end preventable deaths*: Executive summary. Geneva, Switzerland: World Health Organization. Retrieved from https://www.everynewborn.org/Documents/Every_Newborn_Action_Plan-EXECUTIVE_SUMMARY-ENGLISH_updated_July2014.pdf.
4. PMNCH. 2007. *Joint Statement: Health Professional Groups Key to reducing MDGs 4 & 5*. Retrieved from <http://www.who.int/pmnch/events/2006/HCPjointstaterev0102207.pdf>.
5. FIGO. 2012. *Saving Mothers and Babies: the role of strong professional associations*. Retrieved from <http://www.figo.org/sites/default/files/uploads/project-publications/LOGIC/Final%20Version%20of%20LOGIC%20publication%20for%20print.pdf>.



Table 1. Summary list of WHO Recommendations on interventions to improve preterm birth outcomes

Maternal Interventions	Recommendations	Strength of recommendation and quality of the evidence*
Antenatal corticosteroids to improve newborn outcomes	1.0. Antenatal corticosteroid therapy is recommended for women at risk of preterm birth from 24 weeks to 34 weeks of gestation when the following conditions are met: <ul style="list-style-type: none"> ■ gestational age assessment can be accurately undertaken; ■ preterm birth is considered imminent; ■ there is no clinical evidence of maternal infection; ■ adequate childbirth care is available (including the capacity to recognize and safely manage preterm labour and birth); ■ the preterm newborn can receive adequate care if needed (including resuscitation, thermal care, feeding support, infection treatment and safe oxygen use). 	Strong recommendation based on moderate-quality evidence for newborn outcomes and low-quality evidence for maternal outcomes
	1.1. For eligible women, antenatal corticosteroid should be administered when preterm birth is considered imminent within 7 days of starting treatment, including within the first 24 hours.	Strong recommendation based on low-quality evidence
	1.2. Antenatal corticosteroid therapy is recommended for women at risk of preterm birth irrespective of whether a single or multiple birth is anticipated.	Strong recommendation based on low-quality evidence
	1.3. Antenatal corticosteroid therapy is recommended in women with preterm prelabour rupture of membranes and no clinical signs of infection.	Strong recommendation based on moderate-quality evidence for newborn outcomes and low-quality evidence for maternal outcomes
	1.4. Antenatal corticosteroid therapy <i>is not</i> recommended in women with chorioamnionitis who are likely to deliver preterm.	Conditional recommendation based on very low-quality evidence
	1.5. Antenatal corticosteroid therapy <i>is not</i> recommended in women undergoing planned caesarean section at late preterm gestations (34–36 ⁶ weeks).	Conditional recommendation based on very low-quality evidence
	1.6. Antenatal corticosteroid therapy is recommended in women with hypertensive disorders in pregnancy who are at risk of imminent preterm birth.	Strong recommendation based on moderate-quality evidence for newborn outcomes and low-quality evidence for maternal outcomes

* For recommendations related to maternal interventions, the rating of the quality of evidence applies to both the maternal and newborn outcomes where the quality of the evidence for the two is not separately presented.

(continued on next page)

Maternal Interventions	Recommendations	Strength of recommendation and quality of the evidence*
Antenatal corticosteroids to improve newborn outcomes (continued)	1.7. Antenatal corticosteroid therapy is recommended for women at risk of imminent preterm birth of a growth-restricted fetus.	Strong recommendation based on very low-quality evidence
	1.8. Antenatal corticosteroid therapy is recommended for women with pre-gestational and gestational diabetes who are at risk of imminent preterm birth, and this should be accompanied by interventions to optimize maternal blood glucose control.	Strong recommendation based on very low-quality evidence
	1.9. Either intramuscular (IM) dexamethasone or IM betamethasone (total 24 mg in divided doses) is recommended as the antenatal corticosteroid of choice when preterm birth is imminent.	Strong recommendation based on low-quality evidence
	1.10. A single repeat course of antenatal corticosteroid is recommended if preterm birth does not occur within 7 days after the initial dose, and a subsequent clinical assessment demonstrates that there is a high risk of preterm birth in the next 7 days.	Conditional recommendation based on moderate-quality evidence for newborn outcomes and low-quality evidence for maternal outcomes
Tocolytics for inhibiting preterm labour	2.0. Tocolytic treatments (acute and maintenance treatments) are <i>not</i> recommended for women at risk of imminent preterm birth for the purpose of improving newborn outcomes.	Conditional recommendation based on very low-quality evidence
Magnesium sulfate for fetal protection against neurological complications	3.0. The use of magnesium sulfate is recommended for women at risk of imminent preterm birth before 32 weeks of gestation for prevention of cerebral palsy in the infant and child.	Strong recommendation based on moderate-quality evidence
Antibiotics for preterm labour	4.0. Routine antibiotic administration is <i>not</i> recommended for women in preterm labour with intact amniotic membranes and no clinical signs of infection.	Strong recommendation based on moderate-quality evidence
	5.0. Antibiotic administration is recommended for women with preterm prelabour rupture of membranes.	Strong recommendation based on moderate-quality evidence
	5.1. Erythromycin is recommended as the antibiotic of choice for prophylaxis in women with preterm prelabour rupture of membranes.	Conditional recommendation based on moderate-quality evidence
	5.2. The use of a combination of amoxicillin and clavulanic acid ("co-amoxiclav") is <i>not</i> recommended for women with preterm prelabour rupture of membranes.	Strong recommendation based on moderate-quality evidence
Optimal mode of delivery	6.0. Routine delivery by caesarean section for the purpose of improving preterm newborn outcomes is <i>not</i> recommended, regardless of cephalic or breech presentation.	Conditional recommendation based on very low-quality evidence
Thermal care for preterm newborns	7.0. Kangaroo mother care is recommended for the routine care of newborns weighing 2000 g or less at birth, and should be initiated in health-care facilities as soon as the newborns are clinically stable.	Strong recommendation based on moderate-quality evidence
	7.1. Newborns weighing 2000 g or less at birth should be provided as close to continuous Kangaroo mother care as possible.	Strong recommendation based on moderate-quality evidence
	7.2. Intermittent Kangaroo mother care, rather than conventional care, is recommended for newborns weighing 2000 g or less at birth, if continuous Kangaroo mother care is not possible.	Strong recommendation based on moderate-quality evidence

(continued on next page)

Maternal Interventions	Recommendations	Strength of recommendation and quality of the evidence*
Thermal care for preterm newborns (continued)	7.3. Unstable newborns weighing 2000 g or less at birth, or stable newborns weighing less than 2000 g who cannot be given Kangaroo mother care, should be cared for in a thermo-neutral environment either under radiant warmers or in incubators.	Strong recommendation based on very low-quality evidence
	7.4. There is insufficient evidence on the effectiveness of plastic bags/wraps in providing thermal care for preterm newborns immediately after birth. However, during stabilization and transfer of preterm newborns to specialized neonatal care wards, wrapping in plastic bags/wraps may be considered as an alternative to prevent hypothermia.	Conditional recommendation based on low-quality evidence
Continuous positive airway pressure for newborns with respiratory distress syndrome	8.0. Continuous positive airway pressure therapy is recommended for the treatment of preterm newborns with respiratory distress syndrome.	Strong recommendation based on low-quality evidence
	8.1. Continuous positive airway pressure therapy for newborns with respiratory distress syndrome should be started as soon as the diagnosis is made.	Strong recommendation based on very low-quality evidence
Surfactant administration for newborns with respiratory distress syndrome	9.0. Surfactant replacement therapy is recommended for intubated and ventilated newborns with respiratory distress syndrome.	Conditional recommendation (<i>only in health-care facilities where intubation, ventilator care, blood gas analysis, newborn nursing care and monitoring are available</i>) based on moderate-quality evidence
	9.1. Either animal-derived or protein-containing synthetic surfactants can be used for surfactant replacement therapy in ventilated preterm newborns with respiratory distress syndrome.	Conditional recommendation (<i>only in health-care facilities where intubation, ventilator care, blood gas analysis, newborn nursing care and monitoring are available</i>) based on moderate-quality evidence
	9.2. Administration of surfactant before the onset of respiratory distress syndrome (prophylactic administration) in preterm newborns is <i>not</i> recommended.	Strong recommendation based on low-quality evidence
	9.3. In intubated preterm newborns with respiratory distress syndrome, surfactant should be administered early (within the first 2 hours after birth) rather than waiting for the symptoms to worsen before giving rescue therapy.	Conditional recommendation (<i>only in health-care facilities where intubation, ventilator care, blood gas analysis, newborn nursing care and monitoring are available</i>) based on low-quality evidence
Oxygen therapy and concentration for preterm newborns	10.0. During ventilation of preterm babies born at or before 32 weeks of gestation, it is recommended to start oxygen therapy with 30% oxygen or air (if blended oxygen is not available), rather than with 100% oxygen.	Strong recommendation based on very low-quality evidence
	10.1. The use of progressively higher concentrations of oxygen should only be considered for newborns undergoing oxygen therapy if their heart rate is less than 60 beats per minute after 30 seconds of adequate ventilation with 30% oxygen or air.	Strong recommendation based on very low-quality evidence