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ORGANIZATION OF NEONATAL CARE SERVICES AND ITS IMPORTANCE

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Universally 4 million newborns die and another 4 million are stillborn every year. Ninety-eight percent of these neonatal deaths take place in the developing countries. Looking at the state of the world's newborns one can see that, neonatal mortality rate is about 4-5 per thousand in the developed countries while it's nearly 10 fold in the developing world. Causes that underlie these newborn deaths differ according to a country's development rank. According to WHO estimates for the year 2001, newborns die due to infections (32 %), birth asphyxia and trauma (29 %), prematurity (24 %) and congenital anomalies (10 %), mostly in the developing countries.

While organizing neonatal care sevices in a country or a region, priorities should be decided on loking at neonatal and perinatal mortality rates and causes of neonatal and perinatal deaths. Causes of neonatal and perinatal deaths in the developing countries have been documented and reflect some common underlying problems in the health systems.

Starting points in organization of neonatal health care services seems to be improving women's health and social state, family planning practices, antenatal care and safe delivery conditions. Neonatal resuscitation, essential newborn care and sick newborn care practices should also be improved. Communities and health professionals should be advocates of newborn health in order to seek and deliver newborn health care. Existing health systems should be re-organized to host regionalized perinatal care.

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POSTRESUSCITATIVE MANAGEMENT OF THE ASPHYXIATED TERM/PRETERM INFANT

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Following severe perinatal asphyxia the newborn can be affected by multi-organ dysfunction in spite of successful delivery room resuscitation. Central nervous system was the most frequently involved, followed by the kidney, lung, heart, and intestine. Hypotension and heart failure are two of the most serious complications of severe asphyxia as they are associated with secondary ischaemic injury to the CNS, myocardium (endocardial ischemia), kidneys (renal failure) and intestine (NEC). Pulmonary complications with an asphyxiated infant ranges from minimal oxygen requirement to persistent hypertension of the newborn and massive pulmonary hemorrhage. Renal involvement varies from oliguria to azotemia depending on the initial insult. Asphyxia causes activation and consumption of coagulation factors and reduces platelet production and compromise platelet function. While other organs may recover, the consequence of brain damage is long-term abnormal neurologic sequelae.

Postresuscitative management of the asphyxiated infant can be classified in two steps. The first step is the general supportive care in which clinical management is directed at maintenance of adequate ventilation, cerebrovascular perfusion and adequate blood glucose levels. For this purpose the infant's cardiopulmonary status should be monitored and signs of multiorgan system dysfunction sought and treated where appropriate. The second step is neuroprotective therapy, which should be planned according to the phase of postasphyxial injury. After the hypoxic insult, phases of recovery are characterized by the alterations in cerebral blood flow, EEG intensity, and cortical impedance that occur in the first 5 days after perinatal asphyxia. They have been referred as: reperfusion phase (+0-4 hours), latent phase (0-8 hours), secondary energy failure phase (8-72 hours), late phase>72 hours. Current therapy that can be applied in clinical practice includes osmotic agents, barbiturates, allopurinol, ascorbic acid, deferoxamine, ibuprofen and magnesium. Future therapies will be combination of modalities including rescue hypothermia and various pharmacological approaches such as monosialogangliosides, growth factors, gene therapy with anti-apopitotic agents or calcium binding proteins that are appropriate for the phase and mechanism of the postasphyxial injury.