WASHINGTON STATE

Perinatal and Neonatal Level of Care (LOC) 2018 Guidelines

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Contents

Introduction

Washington State Department of Health developed the Washington State Perinatal and Neonatal Level of Care Guidelines in 1988. We have revised them in 1993, 2001, 2005, 2010, and 2013. We want these guidelines to help hospitals assess the type of patients best suited for their facility's capabilities and scope of care. The Level of Care classification allows providers to briefly summarize a given hospital's services while recognizing there can be a broad range of services in each level of care. This revision follows the American Academy of Pediatrics recommendation to use uniform, nationally applicable definitions and consistent standards of service[1,2] to improve neonatal outcomes. The next revision will be in 2023.

The Guidelines don't require individual hospitals to provide the entire scope of service within a Level of Care. We know variation may be needed so both the Guideline objectives and the unique goals of a hospital or region may be met. For example, in some rural hospitals the average daily census of neonates may be lower to ensure access to care.

We hope these guidelines will help:

1. improve the outcome of pregnancy,
2. increase access to appropriate care for pregnant women and newborns, and
3. optimize allocation of resources.

We urge health care providers to remain informed about any updates or revisions of all referenced materials.

This is not a regulatory document. Washington State Certificate of Need program uses this document as a reference for hospitals applying for Level II, Level III, or Level IV designations.

Definitions, Capabilities, and Provider Types[1]

Level of Care	Capabilities	Provider Types
Level I *Well Newborn Nursery*	✔ Provide neonatal resuscitation at every delivery ✔ Evaluate and provide postnatal care to stable term newborn infants ✔ Stabilize and provide care for infants born 35–37 wk gestation who remain physiologically stable ✔ Stabilize newborn infants who are ill and those born at <35 wk gestation until transfer to a higher level of care	✔ Pediatricians ✔ Family physicians ✔ Nurse practitioners ✔ Other advanced practice registered nurses
Level II *Special Care Nursery*	**Level I Capabilities plus:** + Provide care for infants born ≥32 wk gestation and weighing ≥1500 g who have physiologic immaturity or who are moderately ill with problems that are expected to resolve rapidly and are not anticipated to need subspecialty services on an urgent basis + Provide care for infants convalescing after intensive care + Provide mechanical ventilation for brief duration (<24 h) or continuous positive airway pressure or both + Stabilize infants born before 32 wk gestation and weighing less 1500 g until transfer to a neonatal intensive care facility	**Level I Providers plus:** + Pediatric hospitalists + Neonatologist + Neonatal nurse practitioners as appropriate
Level III *NICU*	**Level II Capabilities plus:**[3] + Provide sustained life support + Provide comprehensive care for infants born <32 wks gestation and weighing <1500 g and infants born at all gestational ages and birth weights with critical illness + Provide prompt and readily available access to a full range of pediatric medical subspecialists, pediatric surgical specialists, pediatric anesthesiologists, and pediatric ophthalmologists + Provide a full range of respiratory support that may include conventional and/or high-frequency ventilation and inhaled nitric oxide + Perform advanced imaging, with interpretation on an urgent basis, including computed tomography, MRI, and echocardiography	**Level II Providers plus:** + Pediatric medical subspecialists + pediatric anesthesiologists + Pediatric surgeons + Pediatric ophthalmologists with appropriate qualifications
Level IV *Regional NICU*	**Level III Capabilities plus:** + Located within an institution with the capability to provide surgical repair of complex congenital or acquired conditions + Maintain a full range of pediatric medical subspecialists, pediatric surgical subspecialists, and pediatric anesthesiologists at the site + Facilitate transport and provide outreach education	**Level III Providers plus:** + Pediatric surgical subspecialists

Neonatal Patients: Additional Details of Services and Capabilities

Level I

Services and Capabilities of all Level I:

- ✔ Newborn resuscitation per AHA Guidelines including intubation and vascular access for medications and volume
- ✔ Stabilize sick newborns pending arrival of transport team
- ✔ Breastfeeding support per AAP and WHO guidelines[4]
- ✔ Controlled thermal environment
- ✔ Neonatal cardiorespiratory monitor for use during stabilization, assessment, or observation prior to transport
- ✔ Neonatal pulse oximeter
- ✔ Oxygen blender
- ✔ Device for blood glucose screening
- ✔ Gavage feeding
- ✔ Device and appropriate-size cuffs for assessing blood pressure
- ✔ Hood oxygen/nasal cannula
- ✔ Peripheral IV insertion for fluids, glucose, and antibiotics prior to transport
- ✔ Phototherapy equipment available that produces irradiance of at least 30μWcm^2/nm or ability to simultaneously cover body surface under and over baby
- ✔ Irradiance meter to measure light irradiance of equipment[5]
- ✔ Device to measure blood gas in <0.4 mL blood

Level II

Services and Capabilities of Level I plus:
If services are limited to ≥34 wk and ≥2000 g and for newborns whose problems are expected to resolve rapidly and without need for CPAP, assisted ventilation, or arterial catheter:

- + Space designated for care of sick/convalescing neonates
- + Cardiorespiratory monitor for continuous observation
- + Peripheral IV insertion, maintenance and monitoring for fluids, glucose, antibiotics
- + Neonatal blood gas monitoring
- + Average daily census of at least one to two Level II patients
- + Relationship with regional neonatal center for routine and urgent consultation and medical direction advice by phone, videoconference, or regular visits

If caring for 32–33 wk gestation or moderately-ill infants, add:

- + Umbilical or peripheral arterial catheter insertion, maintenance and monitoring
- + Peripheral or central administration and monitoring of total parenteral nutrition and/or medication and fluids
- + High flow nasal cannula
- + Nasal CPAP
- + Average daily census of at least two to four Level II patients

Level III

Services and Capabilities of Level II plus:

- + Conventional mechanical ventilation
- + Cranial ultrasound
- + Pediatric echocardiography with written protocols for pediatric cardiology interpretation and consultation[6]
- + High-risk NICU follow-up program
- + Quality improvement program with comparisons to national benchmarks for Level III NICUs, e.g., VON
- + Complete range of genetic diagnostic services and genetic counselor available, referral arrangement for geneticist and diagnostics per written protocol
- + Arrangement for perinatal pathology services
- + Average daily census of at least 10 Level II/Level III patients

If services include high-frequency ventilation or inhaled nitric oxide, add:

- + NICU respiratory care practitioners continuously present in the NICU during use

If services include major surgical procedure, add: [7]

- + 24/7 pediatric surgeons
- + 24/7 pediatric anesthesiologists
- + 24/7 pediatric diagnostic and interventional radiology
- + NICU nurses trained to care for post-op infants

Level IV

Services and Capabilities of Level III plus:

- + Full spectrum (all possible) of medical and surgical pediatric subspecialists available 24/7
- + Multi-disciplinary teams for management of complex patients, including those with meningomyelocele, hydrocephalus, urogenital anomalies, orthopedic problems, chronic lung disease, congenital diaphragmatic hernia, congenital heart disease, etc.
- + Therapeutic hypothermia program for hypoxic-ischemic encephalopathy, including aEEG, cEEG, pediatric neurologist, and pediatric neuroradiologist
- + Surgical repair of complex conditions that may require cardiopulmonary bypass, ECMO, dialysis, tracheostomy, etc.[8]
- + Neuro-developmental follow-up program
- + Quality improvement program with comparisons to national benchmarks for Level IV NICUs (Children's Hospital Neonatal Consortium (CHNC))
- + Training and educational relationship with referring hospitals

Additional Sites of Perinatal and Neonatal Care

Location	Hospital Without Delivery Service	Non-Hospital Birth Center (37–42 wk gestation; low-risk pregnancies)
Capabilities	Basic newborn support including thermoregulation and resuscitation as needed following AHA Guidelines for Neonatal Resuscitation[9] and stabilization pending transfer to appropriate level of care facility based on maternal and/or neonatal services required.	Manage newborn resuscitation per AHA Guidelines for Neonatal Resuscitation, including thermoregulation, initial steps of resuscitation and mask ventilation and supplemental oxygen if required pending arrival of Emergency Medical Services. ARNPs and medical providers, if present, may provide endotracheal intubation, emergency vascular access and administration of medication and volume if indicated per AHA Guidelines.[7]
Provider Types	Emergency Room Physicians	Licensed Midwives, Certified Nurse Midwives, Naturopathic Physician

Obstetrical Patients: Services and Capabilities

Level I Neonatal

Uncomplicated pregnancies with the ability to detect, stabilize, and initiate management of unanticipated maternal–fetal or neonatal problems that occur during the antepartum, intrapartum, or postpartum period until patient can be transferred to a facility at which specialty maternal care is available.

Capabilities[10]

- ✔ Ability to begin emergency cesarean delivery within a time interval that best incorporates maternal and fetal risks and benefits with the provision of emergency care
- ✔ Available support services, including access to obstetric ultrasonography, laboratory testing, and blood bank supplies at all times
- ✔ Protocols and capabilities for emergency release of blood products, and management of multiple component therapy
- ✔ Ability to establish formal transfer plans in partnership with a higher-level receiving facility
- ✔ Ability to initiate education and quality improvement programs to maximize patient safety, and/or collaborate with higher-level facilities to do so

Types of Healthcare Providers[10]

- ✔ Continuous availability of adequate number of RNs with competence in Level I care criteria and ability to stabilize and transfer high-risk women and newborns
- ✔ Nursing leadership has expertise in perinatal nursing care
- ✔ Anesthesia services available to provide labor analgesia and surgical anesthesia

Level II Neonatal

Level I Facility Capabilities plus:

- + Computed tomography scan and, ideally, magnetic resonance imaging with interpretation available
- + Basic ultrasonographic imaging services for maternal and fetal assessment

Level I Facility Healthcare Providers plus:[10]

- + Continuous availability of adequate numbers of RNs with competence in Level II care criteria and ability to stabilize and transfer high-risk women and newborns who exceed Level II care criteria
- + Nursing leadership and staff have formal training and experience in the provision of perinatal nursing care and should coordinate with respective neonatal care services
- + OB/GYN available at all times
- + Director of obstetric service is a board-certified OB/GYN
- + MFM available for consultation onsite, by phone, or by telemedicine, as needed
- + Anesthesia services available at all times to provide labor analgesia and surgical anesthesia
- + Medical and surgical consultants available to stabilize obstetric patients who have been admitted to the facility

For hospitals prepared to care for newborns >32 0/7 weeks gestation and estimated birthweight >1500 grams, OB capabilities include management consistent with ACOG guidelines of selected high-risk pregnancy conditions such as preterm labor or other complications of pregnancy judged unlikely to deliver before 32 weeks gestation.

Level III Neonatal

Level II Facility Capabilities plus:

- + Advanced imaging services available at all times
- + Medical and surgical ICUs accepts pregnant women and have critical care providers onsite to actively collaborate with MFMs at all times
- + Appropriate equipment and personnel available onsite to ventilate and monitor women in labor and delivery until they can be safely transferred to the ICU

Level II Healthcare Providers plus:

- + RNs with competence in Level III care criteria and ability to transfer and stabilize high-risk women and newborns who exceed Level III care criteria, and with special training and experience in the management of women with complex maternal illnesses and obstetric complications
- + OB/GYN available onsite at all times
- + MFM with inpatient privileges available at all times, either onsite, by phone, or by telemedicine
- + Director of MFM service is a board-certified MFM
- + Director of obstetric service is a board-certified ob-gyn with special interest and experience in obstetric care
- + Anesthesia services available at all times onsite
- + Board-certified anesthesiologist with special training or experience in obstetric anesthesia

Level IV Neonatal

If obstetrical services are offered, OB capabilities are the same as for Level III.

Patient Transport

Level I

All hospitals demonstrate capabilities to stabilize and initiate transport of patients in the event of unanticipated maternal-fetal-newborn problems that require care outside the scope of the designated level of care. Access to return transport services may be a necessary capability for Level III and Level IV intensive care nurseries.

Transport patients:

- ✔ Who are anticipated to deliver a neonate of earlier gestational age than appropriate for the facility's designated level of care, but should not transport if the fetus or mother is medically unstable or delivery is imminent
- ✔ Whose illness or complexity requires services with a higher level of care than provided at the admitting facility? For neonatal transport, refer to AAP reference titled, "Guidelines for Air and Ground Transport of Neonatal and Pediatric Patients[11]

A hospital that transports patients to a higher level of care facility should:

- ✔ Demonstrate on-going relationships with referral hospital(s) for education, immediate consultation, urgent transport facilitation, and quality assurance
- ✔ Establish a written policy and procedure for maternal and neonatal transport that includes an established triage system for identifying patients at risk who should be transferred to a facility that provides the appropriate level of care
- ✔ Establish guidelines that ensure a provider's continuing responsibility for and care of the patient until transport team personnel or receiving hospital personnel assume full responsibility for the patient

A hospital that accepts maternal or neonatal transports in order to provide a higher level of care than is offered at the referral hospital, should:

- ✔ Participate in perinatal and/or neonatal case reviews at the referral hospital
- ✔ Maintain a 24 hrs/day, 7 days/week system for reliable, comprehensive communication between hospitals for immediate consultation, initiation, and approval of maternal and newborn transports
- ✔ Provide referring physicians with ongoing communication and recommendations for ongoing patient care at discharge

Level II

Level III criteria excluding obstetrical care if not provided.

Return transport may be necessary to make acute care beds accessible and for discharge planning closer to patient's community.

Level III

Level IV

Medical Director

Level I

Obstetrics: Board-certified in OB/GYN or family medicine

Nursery: Board-certified in pediatrics or family medicine

If the medical director is a family medicine physician, he or she may direct both services.

Level II

Obstetrics: Board-certified in OB/GYN

Nursery: Board-certified in pediatrics

If caring for 32–34 week infants:

Obstetrics: Board-certified in OB/GYN

Nursery: Board-certified in neonatology or pediatric hospitalist who has oversight from neonatologist

Level III

Obstetrics (if provided): Board-certified in maternal-fetal medicine

Nursery: Board-certified in neonatology

Level IV

Healthcare Providers

Level I

- ✔ Physician or credentialed obstetrical provider in-house, immediately available in late stage labor or when fetal or maternal complications are imminent or apparent
- ✔ Every delivery is attended by at least one person whose sole responsibility is the baby, whose Neonatal Resuscitation Program (NRP) provider status is current, and who is capable of initiating newborn resuscitation[12]
- ✔ Another person is in-house and immediately available whose NRP provider status is current and who is capable of assisting with chest compressions, intubation, and administering medications[12]
- ✔ Anesthesiologist or nurse anesthetist available to initiate cesarean section within 30 minutes of decision to do so
- ✔ Consultation arrangement with genetic counselor per written protocol

Level II

Level I Coverage plus:

- ✔ Every **high risk** delivery is attended by at least two people[12] one of whom is a pediatrician, family practice physician, or advanced practice nurse capable of a complete resuscitation, including chest compressions, intubation and administering medications

If providing HFNC or CPAP:

- ✔ Continuous in-house availability of personnel experienced in airway management and the diagnosis and treatment of pneumothorax when a patient is being treated with high flow nasal cannula or nasal CPAP
- ✔ Radiologist on-staff with daily availability who can interpret neonatal studies such as chest and abdominal radiographs, and cranial ultrasounds
- ✔ Ophthalmologist with pediatric experience available to do eye exams for neonates who are at high risk for retinopathy of prematurity (ROP) if accepting back transport of such infants; written protocol for referral or treatment
- ✔ Arrangement for neurodevelopmental follow-up or referral per written protocol

Level III

Level II Coverage plus:

- ✔ **Obstetrics:** Immediate availability of an obstetrician with demonstrated competence in the management of complicated labor and delivery patients
- ✔ **Newborn:** Immediate availability of neonatologist or Neonatal Advanced Practice Provider (APP) with demonstrated competence in the management of severely ill neonates, including those requiring mechanical ventilation
- ✔ Obstetrical anesthesiologist or nurse anesthetist immediately available

If services include major surgical procedure, add:

- ✔ Pediatric surgeon available within 30 minutes of request 24/7
- ✔ Pediatric anesthesiologist, with at least 10 infant cases per year, available within 60 minutes of request 24/7

Level IV

Same as Level III Staff plus:

- ✔ Full spectrum of medical and surgical pediatric sub-specialists available 24/7

Nurse:Patient Ratio

Staffing parameters[13] should be clearly delineated in a policy that reflects:

1. staff mix and ability levels;
2. patient census, intensity, and acuity; and
3. plans for delegation of selected, clearly defined tasks to competent assistive personnel.

It is an expectation that allocation of personnel provides for safe care of all patients in a setting where census and acuity are dynamic.[14]

Newborns

- ✔ 1:6 to 8 neonates requiring only routine care*
- ✔ 1:4 recently born neonates and those requiring close observation
- ✔ 1:3 to 4 neonates requiring continuing care
- ✔ 1:2 to 3 neonates requiring intermediate care
- ✔ 1:1 to 2 neonates requiring intensive care
- ✔ 1:1 for unstable neonates requiring multisystem support
- ✔ 1:1 or greater for unstable neonates requiring complex critical care

* *Reflects traditional newborn nursery care. A nurse should be available at all times, but only one may be necessary, as most healthy neonates will not be physically present in the nursery. Direct care of neonates in the nursery may be provided by ancillary personnel under the nurse's direct supervision. Additional staff is needed to respond to acute and emergency situations. The use of assistive personnel is not considered in the nurse: patient ratios noted here.*

Nursing Management

Level I	Level II	Level III	Level IV
Nurse manager of perinatal and nursery services:* ✔ Maintains RN licensure ✔ Directs perinatal and/or nursery services ✔ Guides perinatal and/or nursery policies and procedures ✔ Collaborates with medical staff ✔ Consults with higher level of care units as necessary	**Same as Level I plus:** + Advanced degree or equivalent experience is desirable		

**One RN may manage both services but additional managers may be necessary based on number of births, average daily census, or number of full-time equivalents (FTEs).*

Pharmacy, Nutrition/Lactation, and OT/PT

Level I	Level II	Level III	Level IV
Pharmacy Services			
✔ Registered pharmacist immediately available for telephone consultation, 24 hrs/day and 7 days/wk ✔ Provision for 24 hr/day and 7 days/wk access to emergency drugs	✔ Registered pharmacist available 24 hrs/day and 7 days/wk **If caring for 32–33 week infants:** ✔ Registered pharmacist with experience in neonatal/perinatal pharmacology available 24 hrs/day, and 7 days/wk, esp. when ordering TPN		
Nutrition/Lactation			
✔ Dietary and lactation services and consultation available[15]	**One healthcare professional who is knowledgeable in:** ✔ Management of special maternal and neonatal dietary needs ✔ Lactation services and consultation available ✔ Diabetic educator for inpatient and outpatient OB services **If caring for 32–33 week infants:** ✔ Registered dietician knowledgeable in parenteral nutrition of low birthweight and other high-risk neonates	**Level II Services Plus:** + At least one registered dietitian who has special training in neonatal/perinatal nutrition and can plan diets that meet the special needs of high-risk mothers and neonates, and oversee TPN orders	
OT/PT Services			
Provide for inpatient consultation and outpatient follow-up services			

Social Services/Case Management, Respiratory Therapy, Nurse Educator/Neonatal Advanced Practice Provider

Level I	Level II	Level III	Level IV
Social Services/Case Management			
✔ Mechanism available for high-risk assessment and provision of social services	**Level I Services plus:** + Personnel with relevant experience whose responsibilities include perinatal patients; specific personnel for discharge planning and education, community follow-up, referral process, and home care arrangements **If caring for 32–33 week infants:** + At least one MSW with relevant experience	**Level II Services plus:** + At least one FTE licensed MSW for every 20 NICU patients in delivery hospital[8] and for every 15 NICU patients in children's hospital[8] who has experience with socioeconomic and psychosocial problems of high-risk mothers and babies, available 24 hrs/day and 7 days/wk	
Nurse Educator/Clinical Nurse Specialist			
✔ Phone/TeleHealth/ email consultation /education provided by nurse educator/CNS located at regional Level III or IV NICU ✔ Staff education on maternal or newborn stabilization prior to transport, provided to all staff caring for newborns via TeleHealth Computer technology or onsite	✔ A nurse educator with appropriate training in special care nursery or perinatal care to coordinate staff education and development ✔ If caring for full spectrum of Level II patients, an advanced practice nurse with appropriate training in high risk neonatal care (clinical nurse specialist with graduate education is recommended) for staff development and to effect system-wide changes to improve programs of care	✔ An advanced practice nurse with appropriate training in high risk neonatal care (clinical nurse specialist with graduate education is preferred) for staff development and to effect system-wide changes to improve programs of care	
Respiratory Therapy			
✔ The role of a Respiratory Care Practitioner is prescribed by the medical director and clearly delineated per written protocol. If attending deliveries or providing neonatal respiratory care will have current NRP Provider status	**Same as Level I plus:** + When CPAP in use: in-house and immediately-available RCP with documented competence and experience in the management of neonates with cardiopulmonary disease	**Level II plus:** + One Respiratory Care Practitioner for every six or fewer ventilated neonates with additional staff for procedures + RCP skilled in neonatal airway management immediately available for every high-risk delivery	

X-Ray/Ultrasound

Level I	Level II	Level III	Level IV
✔ Portable x-ray and ultrasound equipment available to Labor and Delivery and Nursery within 30 minutes ✔ Performance and interpretation of neonatal x-rays and perinatal ultrasound available 24 hrs/day and 7 days/wk ✔ Antepartum surveillance techniques available	**Level I Services plus:** + Ultrasound equipment immediately accessible and available to the Labor and Delivery unit 24 hrs/day and 7 days/wk	**Level II Services plus:** + Advanced level ultrasound available to Labor and Delivery and Nursery on-site **If therapeutic hypothermia offered:** + Neonatal MRI with special HIE sequences	

Laboratory and Blood Bank Services

Level I	Level II	Level III	Level IV
Laboratory			
✔ Laboratory technician available 24 hrs/day, and 7 days/wk present in the hospital or within 30 minutes ✔ Capability to report laboratory results in a timely fashion	**Same as Level I plus:** + Lab technician in-house 24 hrs/day and 7 days/wk + Personnel skilled in phlebotomy and IV placement in the newborn immediately available 24 hrs/day and 7 days/wk + Microtechnique for hematocrit and blood gases within 15 minutes	✔ Comprehensive services available 24 hrs/day and 7 days/wk	
Blood Bank			
✔ Blood bank technician on-call and available w/in 30 minutes for performance of routine blood banking procedures ✔ Provision for emergent availability of blood and blood products			

Appendix A: References and Resources

1 American Academy of Pediatrics (2012). Levels of Neonatal Care. *Pediatrics 130(3):* 587–97.
Online at: www.pediatrics.org/cgi/content/full/130/3/587

2 American Academy of Pediatrics and American College of Obstetricians and Gynecologists (2017). Guidelines for Perinatal Care, 7th edition. Riley LE and Stark AR. (eds.) Elk Grove Village, IL: American Academy of Pediatrics.

3 Healthy People 2020. Increase the proportion of very low birth weight (VLBW) infants born at Level III hospitals or subspecialty perinatal centers. United States Dept of Health and Human Services. Online at: https://www.healthypeople.gov/node/4892/data_details

4 American Academy of Pediatrics Section on Breastfeeding (2012). Breastfeeding and the Use of Human Milk. *Pediatrics 129 (3):* e827–e841.
Online at: http://pediatrics.aappublications.org/content/129/3/e827.full.pdf or UNICEF: Ten Steps to Successful Breastfeeding. Online at: www.unicef.org/newsline/tenstps.htm

5 Neonatal Resuscitation (2015). American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Pediatrics 132 supp 2(5):* S543–560.
Online at: http://pediatrics.aappublications.org/content/pediatrics/early/2015/10/13/peds.2015-3373G.full.pdf.

6 Bricker, J.T., Fraser, C.D., Fyfe, D.A., Mahoney L.T., Colegrove, L. (2002). American Academy of Pediatrics Section on Cardiology and Cardiac Surgery Guidelines for Pediatric Cardiovascular Centers. *Pediatrics 109 (3):* 544–549

7 Optimal Resources for Children's Surgical Care v.1.
Online at: www.facs.org/quality-programs/childrens-surgery/childrens-surgery-verification

8 National Association of Perinatal Social Workers—Standards for Social Work Services in the NICU.
Online at: www.napsw.org/assets/docs/NICU-standards.pdf

9 Performance Improvement and Patient Safety (PIPS) Program.
Online at: www.facs.org/~/media/files/quality%20programs/csv/pips%20requirements%20level%20i.ashx

10 American College of Obstetricians and Gynecologists (2015). Obstetric Care Consensus: Levels of Maternal Care.
Online at: www.acog.org/Clinical-Guidance-and-Publications/Obstetric-Care-Consensus-Series/Levels-of-Maternal-Care

11 Technical report AAP: Phototherapy to prevent severe neonatal hyperbilirubinemia in the newborn infant 35 or more weeks of gestation (2011). *Pediatrics 128(5):* e1046

12 American Academy of Pediatrics and American Heart Association (2016). Textbook of Neonatal Resuscitation, 7th edition. Weiner, G & Zaichkin, J, editors. Elk Grove Village, IL: American Academy of Pediatrics.

13 Association of Women's Health, Obstetric and Neonatal nurses (2010). Guidelines for Professional Registered Nurse Staffing for Perinatal Units.

14 Society for Social Work Leadership in Health Care Standards for Social Work Care and Staffing in Children's Hospitals.
Online at: www.aposw.org/docs/SSWPedsStandards.pdf

15 American Academy of Pediatrics (2016). "Guidelines for Air and Ground Transport of neonatal and Pediatric Patients" 4th edition.

Appendix B: Subcommittee for Perinatal Level of Care (LOC) 2018 Guidelines Document

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