INSTRUCTIONS FOR UTMB NURSERIES

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Contact Karen Shattuck, MD
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GENERAL INSTRUCTIONS FOR STAFF IN ISCU AND NEWBORN NURSERY

Sections

Welcome.

If you are new to the Neonatal Nurseries, you will quickly discover that we are a regimented group. In other words, we have a lot of rules. Familiarity with and adherence to all guidelines is essential to good patient care, and also maximizes the time spent with teaching. Thanks for your cooperation!

We refer to our nurseries as follows:

- Newborn Nursery (NBN)
- Infant Special Care Unit (ISCU)
  - Intensive Care
  - Intermediate Care
  - Growers (Infants who are generally stable and but immature feeders)

DRESS CODE AND INFECTION CONTROL

- Wear scrub clothing and UTMB I.D. badge at all times when on duty.
- Lab coats should not be worn for patient care.
- If you choose to wear clothing other than scrubs, it must be worn *under* scrubs.
- Clothing should not extend below the forearm during patient contact.
- Remove all jewelry except flat finger bands which can be thoroughly washed.
- When entering the ISCU or NBN, perform a thorough hand wash (20 seconds) with Foam Care soap.
- Hands are to be cleansed by washing or using hand gel before and after touching any baby.
- Gloves are to be worn while touching any baby in ISCU.
- Hand gel is to be used before gloving and after gloves are removed.
- Eating and drinking are allowed in the lounge area *only*.
- Surgical caps and masks are required for entry into the OR suites. In the L&D resuscitation stand area (outside the OR) and in the outer hallway of the main OR, caps must be worn but not masks.

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MEDICAL DOCUMENTATION

Most of the documentation in both nurseries is part of the electronic medical record (EMR).* Exceptions to this include the OB clinic note, the Perinatal Profile, the Ballard exam, and the Intrauterine Growth Curves.

**Remember that you must access the appropriate EMR context by logging onto the patient census in either nursery. This is essential for entering physician orders.*

EPIC Smart Text Templates have been created for use in the Nurseries. Below is a list of those commonly used by physicians in the Nurseries. **NEO** is the first word of the title of each note, so if you are looking for a template, try searching NEO.

NEO Anesthesia Sign-Out/Post Operative Note
NEO Circumcision with Gomco Clamp
NEO Circumcision with Mogen Clamp
NEO Consult Note
NEO Death Note
NEO Delivery Attendance Note
NEO ECMO Progress Note
NEO Endotracheal Intubation and Surfactant Administration
NEO History and Physical
NEO Hyperbilirubinemia
NEO ISCI Progress Note
NEO ISCU Progress Note
NEO Lumbar Puncture
NEO Newborn Nursery Daily Note
NEO Newborn Nursery Discharge Summary
NEO Peripheral Arterial Line
NEO Transfer Note
NEO UAC/UVC Insertion
NEO Visit with the Mother- Normal Newborn
NEO Work-Up for Infection including Sepsis and Necrotizing Enterocolitis

This template list is current as of 8/31/13.

We provide templates for **H&P** and **Progress Notes**, and for the **NBN Discharge Summary**. The **Discharge Summary for ISCU** is done in Discharge Writer using the maternal history and the Problem List, which the Nurse Practitioners (NPs) are responsible for setting up and editing.

- Do not edit the Discharge Writer *unless* you are doing the Discharge Summary.
- You may add problems to the Problem List, but do not edit the information.

READ YOUR NOTE AFTER YOU TYPE IT AND BEFORE YOU ACCEPT IT!!!
In particular, cutting and pasting should be kept to an absolute minimum. If you do this incorrectly, you should prepare to be embarrassed on rounds, because the attending actually reads your notes. The medical record is a legal document.

Information about writing orders in EPIC is in the ISCU Mini-Manual provided when you begin your ISCU rotation. Most of this information is duplicated elsewhere in this manual.

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RESUSCITATION STAND CALLS

In general, responsibility for the resuscitation area for “low risk” deliveries lies with Housestaff (Residents) or Nurse Practitioners (NP) in the Term Nursery “High risk” deliveries are covered by the ISCU staff. A nurse practitioner, transport nurse, or a senior resident (SR) must attend all deliveries, including "low risk". The SR must pass the "stand beeper" to an equivalent resident, NP or transport nurse when they leave the nurseries.

Low Risk Pedi Calls

Thin Meconium
Fetal Tachycardia due to suspected maternal chorio
Spontaneous Precipitous Delivery
Maternal Diabetes
Routine C-section
Chorioamnionitis
Forceps or vacuum extractions
Maternal HIV or Active HSV
Maternal Narcotics
Oligohydramnios

High Risk Pedi Calls

Premature babies 36 weeks or less
Moderate or Thick Meconium
Twins
Multiple Fetal Anomalies
Cleft Lip/Cleft Palate
Crash C-section
Gut Defects
Hydrops fetalis
Magnesium Sulfate
Breech Deliveries
No Prenatal Care
Cardiac Defects
Hydrocephalus
Abruption or suspected Abruption
Spine Defects
Fetal Decelerations

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PRACTICE GUIDELINES

To increase consistency of care and to use evidence-based practice, a number of practice guidelines have been instituted for the ISCU. These are designed to apply to ~85% of clinical situations; exceptions will be determined by the attending.

- Admission Orders for ELBW babies
- Bilirubin Follow-up Appointments for Babies Discharged from Newborn Nursery or ≥ 35 Weeks GA at Birth (2/15/12)
- Bilirubin Treatment: Management of Newborns After Initiation of Phototherapy (3/15/12)
- Epogen administration
- Feeding Protocol for ISCU
- Perinatal Group B Streptococcus Infection Prevention Algorithm *in the Well-appearing Baby** (10/12/11)
- Gentamicin and Vancomycin therapy
- Hepatitis C (maternal) - treatment and follow-up
- HIV
- ID follow-up for various problems
- Immunizations
- Laboratory monitoring in ISCU
- Late Preterm Infant
- Lipid administration
- Maternal routine serologies and blood type during pregnancy
- Nitric Oxide
- NRP guidelines, including pulse oximetry
- Oxygen Therapy by Cannula in Transition Nursery (5/13/10)
- Oxygen saturation guidelines
- Sepsis: Evaluation and Therapy in the Neonatal Nurseries
- TPN guidelines for writing orders
- Transfusion

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EDUCATION

Newborn Online cases.

Interns in the Newborn Nursery (both pediatric and family medicine) are expected to work through a set of online cases by the end of the 3rd week of a 4-week rotation. These must be completed in order to receive credit for the rotation. These cases are found in the Design a Case program accessible through www.designacase.org.

Login instructions for cases are found here.

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ORGANIZATION AND DUTIES: NEWBORN NURSERY

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- residents
- nurse practitioners

Duties
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- day medical team
- night shift resident or NP
- students (medical and PA)

Circumcisions
Medical Documentation
Transfers
Discharges

The Newborn Nursery consists of two areas:
1) **Transition Nursery** where newly born babies may be admitted for their initial examination and observation during their first 2-4 hours

2) **Normal Newborn (NBN)** where term healthy newborns are cared for during the remainder of their nursery stay. Most babies spend most of their time in the mother's room. When nursing staffing permits, babies are transitioned in the mothers' rooms.
- Babies <35 weeks gestation must be admitted directly to ISCU.
- Babies < 2250 g BW must be admitted directly to ISCU.

Babies should not remain in transition nursery on oxygen for >4 hours unless approved by the attending.

If the infant has a **private physician,** make sure that the unit clerk has notified the doctor. The private physician must be contacted about any problems that arise with the newborn and the discharge plan.

The attending physician should be called during the day for any babies who require oxygen or sepsis workup, or who are otherwise ill. They should be called at night for any problems as they individually specify.

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DUTY HOURS

Interns will work on days, 6AM-4PM most weeks, and take some night shifts (5PM-6AM). The intern on night shift will not be present during the day. **The intern day off** is usually on the weekend, and a comparable intern/resident will cover in their absence. Interns should rotate with the NPs to cover Transition and attend stand calls whenever possible.

Resident will work on nights, 5PM-6AM when intern is not on call.

NPs will staff with 2-3 each weekday, and with 1 on Saturday and Sunday.

If it is necessary for the NP to rotate as the senior resident in charge, this will be clear identified on the schedule. Interns can use any NP as a resource anytime. One NP will primarily cover Transition each day, which includes **attending all low risk stand calls**, except between 6 and 10 AM. During those hours, the transport nurse will cover the stand, unless performing a transport, to free all of the NPs to see babies and write daily notes.

DUTIES

Responsibilities for both the day and night teams

- Maintain a "Newborn Nursery List" on the computer which has information about each baby, such as Date of birth; Mode of delivery; Blood type (mother and baby); Complications; Pertinent physical findings that need follow-up; Lab to be done and to be checked. This must be kept updated throughout the day. A "Discharge Summary List" with the required discharge information and plan for each baby is generated from this each morning.

- Obtain circumcision consent while the baby is in Transition, if desired by the mother, no matter what time the baby is born. *Once the mother has returned to TDCJ, circumcision consent is very difficult to obtain.*

Responsibilities of the day medical team *(NPs and residents):*

Everyone should arrive and be ready for report at 6AM.

- Complete daily **exam** and **notes** on all babies in Newborn Term Nursery.

  Interns should see a *minimum* of 10 babies daily.

  All staff are responsible for completing all morning exams and notes, regardless of the number seen by each individual. NPs and MDs should work together to get the babies seen and notes written for rounds, usually at 9 AM.

  Newborns with a private pediatrician must be examined by an NP or resident, and a note written. However, these babies will not be discussed in rounds.

- Perform circumcisions.
- Update all mothers of changes that occurred overnight, as well as any new developments as they occur.

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- Rounds should be attended by the senior resident (or designated NP), interns and students. The NP or MD will make notes on the "Discharge Summary List" to which the team will refer throughout the day.
- Complete the hospital Discharges, starting during rounds.
- Assist the NP/Intern in Transition Nursery as needed.
- Update the "Newborn Nursery List" with new babies and lab results.
- Complete an H&P on all babies admitted before **4 PM.**
- Each Monday, the senior resident or NP will be responsible for orienting the medical/PA students to the routine of the nursery. This will be standardized to include watching the STABLE video/ Gestational Age Assessment video, followed by demo of newborn exam, daily notes, mother visits and a gestational age exam. Students will be rotate to spend a day in Transition and attend stand calls. The faculty will meet with the students daily and perform the end of the rotation check off exam.

Responsibilities of the night shift resident or NP

- Attend all low risk stand calls.
- Perform H&P on all babies admitted from 4 PM-5AM.
- Update mothers on any changes, such as starting phototherapy.
- Obtain circumcision consents for the next day.
- Visit mothers before 10PM, especially during times when we have no medical students.
- "Bili" rounds. Around 10 PM, assess each baby for jaundice and any other problems (feeding issues, etc.) When indicated, order transcutaneous (TC) and/or serum bilirubin.
- Check lab results and update the list.
- Daily exams and notes on 6-10 babies- more if possible- to assist the day shift.

Responsibilities of the medical and PA students

- Complete daily exam and progress note on 3-5 babies daily, beginning the second day of the rotation.
- Visit the mother, ideally before rounds. After lunch check on new admissions.
- Attend rounds and present babies examined that day.
- Transport stable babies to Radiology if needed.
- Spend at least one day during the week with the Transition NP to attend deliveries and practice the Newborn Exam.
- Night call until 10PM one day per week.
- Meet with faculty daily for teaching.

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CIRCUMCISIONS

You must be certified to perform a circumcision before you begin performing them.
To be eligible to perform circumcisions, interns must complete the following:

- View the circumcision video and read the resources, located on the PEDI - Circumcision Blackboard course
- Observe at least 3 circumcisions
- Pass the online test

When all of these steps have been completed, the trainee must satisfactorily perform 6 circumcisions under observation by an experienced provider. The first 2 circumcisions performed by a trainee *must be observed by faculty*. The next 3 *may be observed by an NP*, and the final one must again be *observed by faculty* in order to be checked off as competent.

Circumcisions are usually performed in the morning. A baby should be NPO for at least one hour prior to his circumcision.

The contraindications for circumcision are:

- hypospadias
- acute illness
- prematurity requiring incubator care
- coagulation problem.

It is preferable to perform a circumcision after the baby is over 24h of age, if possible.

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MEDICAL DOCUMENTATION

Admission. Items to be completed include:

- History and physical examination (Neo Smart Text) in the EMR.
- NEO Delivery Attendance Note (if attended by Peds personnel) in the EMR.
- Ballard exam for gestational age (on paper)
- Intrauterine growth curve and body measurements (on paper)

Daily progress notes.
All babies must be examined and have a daily note written by a resident or NP.
Particular care should be taken with the following:

- Babies who have **abnormal findings** on their admission history and physical or who develop any **clinical problems** during their nursery stay
- Any baby who remains in the nursery **more than 48 hours** because of a maternally related reason (e.g., c-section, maternal infection, or other illness). The reasons why the baby is still hospitalized (e.g., mother is sick and there is no one at home to care for the baby) must be documented in the chart every day.
- **Social needs** should be addressed with the help of nursing and the case manager. The nurse case managers will assist all new mothers to identify social service needs. The mother should be interviewed by the physician, especially if CPS involvement may be needed. The consult should include the specific reason for the request.

Procedure notes. Circumcision, delivery attendance, lumbar puncture, sepsis work-up, and placement on phototherapy are common procedures which require notes in Newborn Nursery. All have NEO Smart Texts.

Mother Visits. Write a note in the baby's chart about your visit. This is easily done using the "Neo Visit with the Mother" template in the EMR.

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TALKING WITH PARENTS

Lack of communication between parent and the medical team is a common problem in the newborn nursery, in part because of the large number and the short stays of the babies. Please remember that most parents are very concerned about their babies. They may become frustrated or angry if they are not kept informed about the clinical condition of their baby.

A physician or NP must talk with the parents of any baby with a problem; the routine mother visit (discussed below) is insufficient if it is performed by a student.

Mother visits.
As part of the nursery routine care, the mother of *every* newborn should receive a personal visit from a member of the medical team. If a special need is anticipated, such as a requirement for a 36-48 hour stay due to blood group incompatibility, this issue should be addressed at that time.

The following are general guidelines for this visit.

1. Before visiting, write down the baby's gender, weight (in lb-oz), length (in inches), and any distinctive features or problems that the baby has. The mother or someone else in her room often asks the length as well as the birth weight. If you say "he" instead of "she" they will wonder if you even know their baby; gender is much more important to the family than it may be to you as the doctor.
2. Introduce yourself as part of the nursery medical team taking care of the baby. Most people are very happy with their newest addition, so a word of congratulations is appropriate.
3. If the baby is completely normal, so state.
4. If the baby has a feature, such as obvious bruising, which may require follow-up, mention that. Avoid frightening and ambiguous phrases such as "birth trauma".
5. If the baby has a problem such as hypoglycemia which may require follow-up or treatment, give the mother basic information and tell her you will keep her informed.
6. Tell her that the baby will receive a blood test which screens for many rare conditions- often called the PKU test, before discharge and that this will be repeated at two weeks of age.
7. Find out where she plans to take the baby for the follow-up at 1-2 days after nursery discharge, and at 2 weeks of age. The main purposes of the 1-2 day visit are to check for adequate feeding and jaundice.
8. Ask if they have a car seat, and tell them that a car seat is required by Texas Law. The baby must be properly secured in the back seat, facing the rear of the vehicle.
9. Explain that the baby can be discharged with the mother after 24-48 hours ***if*** the baby has a normal pattern of stooling, voiding, feeding and body temperature, and if no new problems develop. Explain that in the mornings, no babies are discharged before approximately 11 am because the doctors are looking at all of the babies, and we would appreciate her patience.
10. Ask if she has questions. If you don't know the answer, assure her that you will find out and do so.

Additional visits. If the baby requires additional testing or consultation, the parent(s) should be informed as soon as reasonably possible, and then updated about the results.

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TRANSFERS TO ISCU

Transfer from Transition or Newborn Nursery to ISCU is indicated in the following circumstances:

- Oxygen requirement with expectation for continued need for oxygen or tachypnea (RR > 60) for more than 4-6 hours.
- PaO_2 < 100 mmHg or oxygen saturations less than 90% on nasal cannula oxygen at 2 LPM F_iO_2 1.0.
- Seizure activity
- Cyanosis not abolished by oxygen.
- Hypovolemic shock requiring volume expansion that is refractive to immediate therapy or that requires central line placement.
- Need for continuous I.V. access for management of refractory hypoglycemia.
- Any baby who is ill or otherwise unstable. If unsure about the need for transfer, contact the attending physician immediately.

Babies in the Newborn Nursery whose mothers have infectious conditions, such as active herpes lesions or varicella, which pose a risk to the other babies should be transferred to the Children's Floor if appropriate facilities for their isolation are not available in the nursery areas. If the nursery census is very high, consideration should be given to transferring babies to the Children's Floor once the mother is discharged. An example might be the baby who is doing well but requires 7-10 days of antibiotics, whose mother wants to stay with him.

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DISCHARGES

The newborn must be hospitalized for a *minimum* of 24 hours, during which time the baby has achieved thermal homeostasis and has fed successfully (demonstrated normal sucking and swallowing mechanisms). Mature, healthy newborns are generally discharged by 24-48 hours of age if delivered vaginally and by 48-72 hours if delivered by C-section.

Requirements for discharge:

- The discharge physical examination, performed within 6-8 hours of discharge, is normal. Babies born after 1600 will need a repeat examination at 24 hours of age, if they are eligible for 24 hour discharge.
- Feeding is adequate with normal stool and urine patterns. The baby should have passed both stool and urine and should be taking at least 40-45 cc of formula or breastfeeding well.
- Thermal stability has been established.
- Newborn screening tests have been completed.
- The hearing exam (OAE) has been completed.
- The Hepatitis B vaccine has been given, if consent is given
- The home environment is appropriate and those who care for the baby are competent and comfortable
- A physician-directed source of continuous medical care following hospital discharge has been identified. This must include **follow-up appointments 1-3 days after discharge and at 2 weeks of age**.
- The following lab work has been completed and **recorded in the infant's chart:**
  - Blood type and DAT if the mother is type O or Rh negative
  - Maternal serologies, using the guidelines below

Maternal Testing	First	Second	Infant Follow-up (if mother is positive)
RPR	Entry to PNC	Within 7 days of delivery*	3 months
Hepatitis B	Entry to PNC	Within 7 days of delivery*	9 months**
HIV	Entry to PNC	≤90 days from delivery (at 35-36 wks unless mother presents in labor)	6 weeks**
Hepatitis C	If indicated		2 months

*Exceptions may be made if the mother is hospitalized for more than 7 days prior to delivery
**ID consult required.

Relative contraindications to early discharge (<36 hours) include (but are not limited to):

1. Poor feeding (<40 cc q 4 hrs)
2. Positive DAT
3. Inadequate maternal treatment for GBS
4. Preterm (<37 weeks) or <2500 gm BW

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Discharge Diagnoses are included in the EPIC SmartList.

Primary or Principal Diagnoses*:*

1. Term Birth (baby has completed 37 weeks, and so is > 37 weeks)
2. Preterm Birth (i.e., less than 37 completed weeks).

Secondary or Additional Diagnoses*:*

- Appropriate, Small or Large for Gestational Age (Use Colorado growth curve standards)
- Hyperbilirubinemia. If possible, give etiology of the jaundice (i.e., physiologic, or due to AO incompatibility).
- Cephalohematoma, facial palsy, or any other abnormalities associated with the forces of labor
- Hemolytic Disease of the Newborn due to AO (or BO) Incompatibility, if baby has positive DAT with either anti-A or anti-B antibodies)
- Hypoglycemia
- Respiratory Depression
- Transient Tachypnea of the Newborn
- Dislocatable Hip (specify which hip) or Dislocated Hip (specify which hip). (*Do not use the term hip click*)
- Congenital malformations (e.g., cleft lip/palate)
- Heart murmur of unknown etiology (if unknown) or enter the specific cardiac normality (if known)

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ORGANIZATION AND DUTIES: ISCU

The Infant Special Care Unit (ISCU) includes intensive care, intermediate care, and growing preterm infants. Outborn infants may be accepted only by the attending.

There are two hospital **levels of care** in the Infant Special Care Unit: ISCU (Intensive) and ISCI (intermediate). As patient status changes, the level of care should be reflected by a physician order in the EMR.

Notify the attending physician of all admissions and of major changes in the condition of any infant. The neonatology fellow must be notified ***within 10 minutes of a new admission***. The faculty must be notified ***within 1 hour of a new admission***, or immediately if the baby is unstable.

Parents of ill infants need at least one progress report daily. Parents are encouraged to visit their infants as early and as often as possible. They should be informed daily about their infant's condition and more often if warranted. Make sure that contact numbers are exchanged with them. Visiting hours in the ISCU are limited only during nursing report and physician's rounds.

ROUNDS

Board Rounds, AKA the “morning huddle”, includes all members of the ISCU team and occurs at 0900-0915 daily. This is intended to be a snapshot of the anticipated activity and personnel of the day.

Rounds with the attending start immediately after board rounds, usually no later than 0930. The goal is to be finished with rounds no later than noon.

Sometimes the attending prefers to make quick rounds on the intermediate babies located in the middle, Nichols and Jackson rooms *before* Board Rounds, especially if the census is high.

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PATIENT ASSIGNMENTS

Medical clerkship students (MS3) are expected to take a patient load of 2-3. The medical student takes the weekends off. There is no night call.

Acting interns (MS 4) are expected to take a patient load of 5-8.

> **Note:** *If possible, patients assigned to the acting interns and the medical students should be included on the panels of the senior resident or nurse practitioners, not the intern panels.*

Interns are expected to be responsible for **10** patients.

The remaining patients are divided between the **senior residents (SR)** (PL2 or PL3) and the **nurse practitioners**. The SR is off on Wednesday. On the weekends, the day SR works both the day and night shift on Saturday (24h). The night SR comes in at 1600 on Sunday.

DUTY HOURS

Acting Interns

0600-1700
Day Off: Saturday or Sunday
Call is every fourth night. You leave at noon the day following night call.
One AI should attend all high risk deliveries

Interns

Sunday-Friday: 0500-1700
Saturday: 0500-1300 (later if needed)
Day Off: Thursday or Friday. On the day *before* the day off (Wednesday or Thursday), duty hours are **0500-2200**

Continuity clinic is one-half day per week.

Interns should attend all high and low risk deliveries if not involved with rounds or other patient care responsibilities. This is a vital part of training.

Senior Residents (SR)

12 hour shifts with shift change at 0600 and 1800 Mon, Tues, Thurs and Fri
On Wed, the day SR is off
On Sat, the day SR works 24 hours (0600-0600 Sun) and the night SR is off
On Sun, the day SR is off and the night SR arrives at 1600

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SUPERVISORY RESPONSIBILITIES

ISCU Senior Resident (SR) (PL2 and/or PL3)

- Attending all high risk deliveries and supervising the resuscitation as needed
- Ordering the morning Xrays
- Maintaining a master list of all patients, their major diagnoses and plans of care
- Monitoring the lab results of ***all*** ISCU patients, along with the NPs
- Assigning patients, attending rounds, and being present in the ISCU at all times to supervise and assist as needed, unless attending clinic or required conferences
- Supervising the third year medical student as needed
- Supervising the acting intern by discussing the patient with the AI before rounds

Neonatal Nurse Practitioners (NNPs)

- Assuming the role of ISCU supervisor on Wednesdays (6a-6p) and Sundays (0600-1600)
- Writing notes on and following the *critically ill babies* of the PL1 who is off
- Following the daily labs of ***all*** patients in the ISCU, along with the SR
- Following ***all of the babies*** to provide continuity, including updating chart documentation, especially the Problem list and Discharge Writer
- Documenting the maternal RPR, Hepatitis B, and HIV for all new admissions
- Teaching of the parenteral nutrition (TPN) ordering process (along with the PharmD)
- Assisting with procedures and admissions, especially during rounds
- Attending deliveries as needed
- Attending rounds (one NNP needed daily; when there is only one NP, attendance in the front room is sufficient)

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MEDICAL DOCUMENTATION

Admissions. The following must be completed on all admissions:

- H & P in the EMR chart, including a review of the maternal prenatal care, maternal blood type, and results of maternal testing for syphilis, HIV, Hepatitis B, and Group B Strep
- A resuscitation note in the EMR if attended by a faculty, resident or NP
- the Ballard exam for estimation of gestational age
- the Intrauterine Growth Curve graph

Progress notes . Every infant requires *at least one* and *sometimes more* than one note every day. This note changes in patient condition or treatment plan, physical examination, assessment including all problems, and a plan for each active problem. After or during rounds, the progress note should be *amended* ***using an addendum*** to reflect changes or additions to the care plan made by the attending. The report of any daily x-ray studies or labs should be included.

Discussions with the parents must be documented.

Procedures, both major and minor, must be documented. These include: umbilical artery catheterization, umbilical venous catheterization, endotracheal intubation, surfactant administration, mechanical ventilation, lumbar puncture, thoracentesis, paracentesis, chest tube insertion, central venous catheter insertion, suprapubic bladder tap, circumcision, percutaneous arterial catheterization, ventricular tap, pericardiocentesis, exchange transfusion (double volume, single volume, or partial), venous or arterial cutdown, enemas and *any* surgical procedure performed in the operating room or in the ISCU. Documentation should be done as soon as possible following the procedure by the person performing the procedure. **Smart texts are available on the EMR** for many of these procedures (browse with NEO).

Informed consent must be obtained for all non-emergent procedures ***except lumbar puncture***. The mother or legal guardian must be the consenting party. The father may consent if the parents are married. The most common procedures for which consent is obtained are transfusion of blood and blood products, PICC lines, percutaneous arterial catheterization, and exchange transfusion. Although written consent is not required for emergency procedures, LPs or minor procedures such as enemas, the parent(s) must be informed of the reason and results as soon as possible.

Consent for surgical procedures done by the surgical services should be obtained by the appropriate surgical resident or faculty.

Consents for transfusion and PICC placement for very low birth weight babies (I< 1500 g) should be done at the time of admission, or, at the latest, before the mother's discharge. This will prevent the need for telephone consents at the time these procedures are required. Indications for transfusion should be noted in the progress notes. Consent for blood transfusion must be renewed after 30 days.

Consent for Emergency Procedures may, in certain circumstances, need to be obtained by phone. This requires witness by the physician and nurse through signatures by both on a properly completed consent form. A progress note should be written documenting the emergent nature of the procedures and why the parents or guardians were unable to be present.

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DISCHARGE

Discharge summaries are to be done on *all* infants admitted to the ISCU.
Requirements for discharge:

1. The baby is able to maintain body temperature in an open crib for at least 24 hours.
2. The baby has taken all feed by nipple for 48 hours and has gained weight consistently.
3. The parents have been educated about the care of the baby. In particular, the parents must be competent in administering medications and formula. Some parents will need to be taught CPR.
4. Routine tests have been done prior to discharge according to medical criteria (i.e., OAE, eye examination, MRI, and neonatal screening tests) and maternal labs are documented.
5. Appropriate follow-up appointments have been made and given to the parents.
6. A complete physical examination has been performed, including **current weight, length and head circumference**

GUIDELINES FOR REQUIRED EXAMINATIONS

Ophthalmology Examination for Retinopathy of Prematurity (ROP)

- Gestational age 30 weeks or less
- Birth weight 1500g or less
- Birth weight 1500-2000g who meet any of the following conditions:
    - SGA or IUGR
    - On ventilator more than 24h
    - Indocin therapy
    - s/p ECMO

Age of first ROP examination: 4 weeks
Any baby less than or equal to 26 weeks at birth will receive the first exam at 29 weeks GA, and followed weekly (5/12)

Cranial Sonography (head ultrasound) for IVH

- Gestational age 31 weeks or less
- Birthweight 1500 g or less

Age at first HUS: 7 days or more.
Follow-up: Unnecessary if normal
If abnormal, repeat in 1-2 weeks and routinely until stable

Cranial MRI for PVL

- Gestational age 28 weeks or less
- Done at 40 weeks PCA or at discharge (whichever comes first)

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CLINIC FOLLOW-UP

Preterm Follow-up Clinic ("Premie Clinic") is held Tuesday afternoons. Infants are usually appointed to the Premie Follow-up Clinic for 3-4 months after hospital discharge. Scheduling is the primary responsibility of the discharge planning nurses. Babies with the following conditions are appointed to the Premie Clinic:

- Gestational age 32 weeks or less at birth
- Birth weight 1500g or less
- BPD requiring home oxygen
- Home apnea monitoring
- Intraventricular hemorrhage (IVH) Grade 3 or 4
- Periventricular leukomalacia (PVL)
- Hypoxic-ischemic encephalopathy (HIE)
- Treatment with ECMO
- Any other indication at the request of the attending neonatologist

Special Services Clinic. Babies with the following conditions are appointed to the Special Services Clinic instead of Premie Clinic:

- SGA
- Chromosomal abnormalities
- High risk social problems
- Multiple or long-term medical problems

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PROCEDURES FOR DEATH AND AUTOPSY

Required documentation for all admissions, even if the baby is previable, includes the H&P, Ballard exam, Intrauterine Growth Chart and Discharge Summary (in EPIC). Criteria for estimating gestational age can be found in the chart below.

CHECKLIST FOR A PATIENT DEATH

The physician pronouncing death must work with nursing staff to make sure the following steps are carried out (order may vary):

1. Complete the Authorization for Post-Mortem Procedures (Medical Record Form 5012, rev 7/2008) shown below

2. Follow all instructions in the form. All deaths in the nurseries fall under Medical Examiner Jurisdiction, so the ME must be notified. They have the authority to order an autopsy, but seldom do so.

3. Write a death note in the chart.
   - The time of death should be noted. Death is defined as one minute of cardiac silence.
   - Copy the death note and resave it in EPIC as a Discharge Summary.

4. Inform the attending physician or fellow.

5. If the deceased is recently born (i.e. a previable fetus), make sure the clerk is also aware of the death.

6. Notify the family of the patient's demise, even if previable.

7. Obtain permits for organ or body donation or autopsy.

8. Sign the Death Certificate online at the Texas Electronic Records website https://ter2.dshs.state.tx.us/edeath/

9. Call Transportation to take the body to the morgue. The deceased must not be removed from the ISCU census until Transportation has removed the body from the ISCU.

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ABORTUSES AND EXTREMELY IMMATURE FETUSES

The State of Texas has codified the definition of "Live Birth" and "Fetal Death" used by the World Health Organization (WHO) (Texas Administrative Code, Title 25, Part 1, Rule §181.1).

"Live Birth": The complete expulsion or extraction from its mother, of a product of conception, *irrespective of the duration of pregnancy*, which, after such separation breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live born.

"Fetal death": Death prior to the complete expulsion or extraction from its mother of a product of conception, *irrespective of the duration of pregnancy*; the death is indicated by the fact that after such separation the fetus does not breathe or show any other evidence of life such beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.

Be aware that "fertilization age" is not the same as gestational age. Gestational age is the fertilization age plus 2 weeks approximately.

CRITERIA FOR ESTIMATING FERTILIZATION AGE DURING THE FETAL PERIOD

Age (weeks)	CR Length (mm)[2]	Feet Length (mm)[2]	Fetal Weight (gm)[+]	Main External Characteristics
A. Previable Fetuses				
8	40	6	5	*Eyes open*. Low-set ears. Short neck. Intestine in umbilical cord.
9	50	7	8	*Eyes closing or closed.* Head more rounded. External genitalia still not distinguishable as male or female
10	61	9	14	*Intestine in abdomen.* Early fingernail development.
12	87	14	45	*Sex distinguishable externally*. Well-defined neck.
14	120	20	110	*Head erect.* Hind limbs well developed.
16	140	27	200	*Ears stand out* from head.
18	160	33	320	*Vernix caseosa present.* Early toenail development.
20	190	39	460	*Head and body (lanugo) hair visible.*
22	210	45	630	*Skin wrinkled* and red.
24	230	50	820	*Fingernails present.* Lean body.
B. Viable Fetuses				
26	250	55	1000	*Eyes partially open.* Eyelashes present.
28	270	59	1300	*Eyes open.* Good head of hair. Skin slightly wrinkled.
30	280	65	1700	*Toenails present.* Body filling out.
32	300	68	2100	*Fingernails reach finger tips.* Skin pink and smooth.
36	340	79	2900	*Body usually plump.* Lanugo hairs almost absent. Toenails reach toe tips.
38	360	83	3400	*Prominent chest;* mammary glands protrude. Testes in scrotum or palpable in inguinal canals. Fingernails beyond finger tips.

* These measurements are averages and so may not apply to specific cases: dimensional variations increase with age. The method for taking CR (crown-rump) measurements is illustrated in Figure 6-13.

[+] These weights refer to fetuses that have been fixed for about two weeks in 10 per cent formalin. Fresh specimens usually weigh about five per cent less.

From: Moore, K.L.: Before We Are Born - Basic Embryology and Birth Defects. W.B. Saunders, 1974.

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AUTHORIZATION OF POST MORTEM EXAMINATIONS

The Autopsy Law in Texas (Enacted 1953) states that autopsy consent may be given on behalf of an unmarried deceased in the following order: father, mother, guardian, next of kin, or by anyone assuming custody of and responsibility for burial.

1. If the father is unknown or unavailable, mother's consent and signature is adequate.
2. If the parents are unmarried, and the mother uses her maiden name for self and child, she must sign permit.
3. The signing parent (if unmarried) must be over 18 years (if below 18 years, get hers plus *her parent* if available).
4. A collect wire to hospital can give permission for out-of-town parent. Cannot use telephone permission. (Check with **Admitting Office** for proper wording, 409-772-1507, or Ext. 21507).
5. The witness should be a nurse or ward clerk - not another physician or medical student.
6. If necessary, call Autopsy Office (409-772-2858 or Ext. 22858).

COUNSELING THE FAMILY AND SEEKING PERMISSION FOR AUTOPSY

The physician with the best rapport with the family should ask permission for the post mortem examination. An individual technique will evolve with time but the following suggestions may be of help:

1. Careful establishment of good physician-parent relationship is essential. If the parents are convinced the physicians worked diligently with genuine concern, permission is more likely to be granted.
2. Explain that an autopsy can be of help in explaining details of the case, far-reaching results of the illness on the family, congenital defects, potentialities for recurrence in subsequent offspring, and assist in medical progress.
3. Explain that the post mortem is a final service we can offer the deceased and his family.
4. There is no additional expense or delay in funeral arrangements.
5. Reassure them that the body of the deceased will not be disfigured and an open-casket funeral may be held. It may help to compare it to an operation on a living person. If desired, the head may be excluded from internal examination.

SECTION 1: GALVESTON COUNTY MEDICAL EXAMINER JURISDICTION — *To be completed by Physician*

You must notify the Galveston County Medical Examiner (GCME) by calling ext. 24004 if any of the following apply. This applies to all deaths including those of Texas Department of Criminal Justice (TDCJ) and all other incarcerated individuals. If you are unsure if it is a Medical Examiner case, call the Medical Examiner. Check appropriate criteria:

- ☐ A patient dies within 24 hours of hospitalization
- ☐ A patient younger than 6 years of age dies (excluding stillborn)
- ☐ You are uncertain of the circumstances of death
- ☐ You suspect death was by unlawful means
- ☐ Circumstances lead you to suspect the death by suicide
- ☐ Someone dies from unnatural causes, no matter how remote in time **(Verify from prior hospitalizations whether death resulted from an earlier trauma, accident, attempted suicide, near-drowning, poisoning, or burns).**

If the Medical Examiner exercises jurisdiction over the death, complete entire form EXCEPT section 4.

☐ None of the above applies. Proceed to section 2.

SECTION 2: TEXAS DEPARTMENT OF CRIMINAL JUSTICE DEATHS — *To be completed by physician*

Is patient a Texas Department of Criminal Justice inmate? Yes No

If yes, notify the TDCJ Chaplain's Office, ext. 26191, or TDCJ communications, ext. 26108, and skip to Section 6.

SECTION 3: DETERMINING LEGAL NEXT-OF-KIN (CONSENT HIERARCHY FOR AUTOPSIES AND DISPOSITION OF BODY) — *To be completed by Physician*

A Medical Power of Attorney routinely ceases to be effective upon death. If family conflict arises, or if medical power of attorney contains language regarding disposition, or if a legal guardian exists, or if uncertain about the above, contact Legal Affairs.

Move lower on the list only if unavailable or inapplicable.

- ☐ Decedent's written wishes for disposition of body (not applicable for autopsy)
- ☐ Decedent's spouse
- ☐ Decedent's adult children
- ☐ Decedent's parents
- ☐ Decedent's adult brother or sister
- ☐ The guardian of the person of the decedent at the time of death

Comments regarding status:_____

IF PT ID CARD OR LABEL IS UNAVAILABLE, WRITE DATE, PT NAME AND UH# IN SPACE BELOW

AUTHORIZATION FOR POST-MORTEM PROCEDURES PAGE 1 OF 3

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The University of Texas Medical Branch Hospitals Galveston, Texas

GALVESTON COUNTY AUTHORIZATION FOR POSTMORTEM PROCEDURES- Page 2

SECTION 4: AUTHORIZATION FOR AUTOPSY
IF MEDICOLEGAL SKIP TO SECTION 5.

To be completed by Physician

UTMB offers autopsy for all inpatient deaths. The pronouncing physician is responsible for discussing autopsy with the legal next of kin. They are also responsible for obtaining written consent when the legal next of kin is present and agrees to the procedure. If the legal next of kin can not be contacted, or are not present to sign the consent, send the body to the hospital morgue and Autopsy Services will contact the legal next of kin for consent.

Check one: Physician signature

- ☐ **Discussed autopsy with legal next of kin and procedure declined. Proceed to section 5.** _____
- ☐ **Legal next of kin requests autopsy, but not present to sign consent: Body to morgue.** _____
- ☐ **Unable to contact legal next of kin. Body to morgue.** _____
- ☐ **Family consents to autopsy. Complete remainder of section 4.**

***** COMPLETE THIS PORTION OF SECTION 4 ONLY IF THE FAMILY CONSENTS TO AUTOPSY*****

I (We) _____, (relationship-see list above) _____of (decedent) _____, hereby authorize The University of Texas Medical Branch Hospitals, its physicians and representatives to perform an autopsy as specified below upon the body of the above named decedent.

****A postmortem examination (autopsy) is performed to determine the cause of death and to provide information to physicians that may contribute to the care and treatment of living patients. An autopsy consists of a complete external and internal examination with inspection, removal and retention of any organs related to the cause of death, effects of treatment, or other co-existing significant disease states.* ***Once removed, some organs may be retained to provide complete diagnostic information, and for teaching purposes for health care professionals.*** *Retained organs will be disposed of in accordance with customary medical practice.* ***Retained specimens may also be used for research*** *that could potentially benefit future patients. Specimens will only be used in research projects that ensure patient confidentiality and that have been approved by the Institutional Review Board (a UTMB committee that protects the rights and welfare of human research subjects). The autopsy will not interfere with embalming or a family's desire to have an open casket memorial service.* ***Consent for autopsy is voluntary and can be restricted as to what organs should not be removed or retained.***

SPECIAL INSTRUCTIONS (Such as restrictions or religious prohibitions): _____

_____

Signature of next-of-kin: _____ Address: _____

Witness _____ City, State Zip _____

Witness _____ Phone: _____

SECTION 5: DISPOSITION OF THE BODY

To be completed by Physician

I(We) _____, (relationship) _____ of (decedent), _____. do hereby accept responsibility for disposition of the body and hereby authorize The University of Texas Medical Branch Hospitals to

- ☐ Release the body to (name, city, and phone number of funeral home or other Institution). _____ Phone # _____.
- ☐ Dispose of the body in accordance with customary medical practice. Families may choose this option for stillborns and neonates less than 28 days old.

Signatures:

Legal next-of-kin: _____ Print name: _____

Witness: _____ Address: _____

Witness: _____ City, State Zip _____

Date: _____ Phone: _____

Note: If the legal next-of- kin is not in the hospital, telephone consent may be obtained for disposition of body. A detailed instruction follows this form.

IF PT ID CARD OR LABEL IS UNAVAILABLE, WRITE DATE, PT NAME AND UH# IN SPACE BELOW

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GALVESTON COUNTY AUTHORIZATION FOR POSTMORTEM PROCEDURES- Page 3

SECTION 6: CHECKLIST — *To be completed as designated*

For TDCJ inmates, items 7 and 8 are not applicable (N/A).

Physician: Completed by:_____ **Circle On**

1. Death note written in EPIC — Yes
2. Print name of Certifying physician:
   _____
3. Death reported to Galveston County Medical Examiner (ext. 24004)
   Time:_____ Investigator:_____ — Yes / Not Required
4. Medicolegal autopsy ordered by Medical Examiner? — Yes / No
5. Successfully notified legal next-of-kin (and/or TDCJ)? — Yes / No
6. Physician to enter patient information via online TER Death Registration program with Texas Department of Health Services upon receipt of email from funeral home
7. Autopsy authorization section completed, witnessed, and signed (Non-Medical Examiner cases only) — Yes / No / N/A
8. Print name and pager # of physician to be notified before autopsy
   _____
9. Funeral home disposition completed with legal next-of-kin? — Yes / No / N/A

Nursing: Completed by:_____

1. Notify Southwest Transplant Alliance (800-201-0527) Time:_____ Confirmation #_____
2. Verified that patient ID band is on body — Yes
3. Personal belongings released to funeral home, family, GCME, hospital morgue (circle one) — Yes / No / N/A
4. Body to be released to (check one):
   - ☐ Funeral home: Form 5012, current and old medical records to Autopsy services.
   - ☐ Hospital morgue: Transportation notified. Form 5012, current and old medical records to Autopsy Service.
   - ☐ GCME: Form 5012, current and old medical records to Autopsy services.
5. Page the Nurse Administrator to review paperwork prior to release of the body _____ (Administrator initial)

SECTION 7: MORGUE ENTRY — *To be completed by Transportation*

Transportation:

Body transported to hospital morgue and entered in mortuary book — Yes

SECTION 8: RELEASE OF BODY — *To be completed by Autopsy or Nursing Staff*

Notify funeral home or GCME for release? Date:_____ Time:_____ By:_____

_____ Name of funeral home or GCME	_____ Name of hospital personnel
_____ Signature of representative	_____ Title of hospital personnel
ID checked prior to release: _____ Initial	ID checked prior to release: _____ Initial
Received personal belongings _____ Signature	_____ / _____ Date

IF PT ID CARD OR LABEL IS UNAVAILABLE, WRITE DATE, PT NAME AND UH# IN SPACE BELOW

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