**Newborn Nursery**

**Introduction:**

* Mother-baby unit in the hospital - Steer right at Starbucks and take the elevator/stairs to the 6th floor.
* Wear scrubs and you ID is a **MUST** at all times
* We encourage non-separation, so infants will be found in mom’s room if medically stable
* Most babies are on 6th floor with overflow on the 5th floor. High risk moms (ex. Preeclampsia) will be on “Antepartum” on 5
* To locate baby, look for the room the mom is in. Open moms chart (click “related records” in toolbar room # is in the upper left corner)
  + If there is an “F” next to your patient’s name, they are on the 6th floor.
  + If there is an “E”, they are on the 5th floor.
* The NB resident covers weekdays 6am - 5pm, 1 weekend day for three weekends and 1 golden weekend during your block.
* There are Nursery call shifts on a weekend day for people on electives, so you may work in the nursery before your actual rotation.
* **PRIOR to your first day** of Newborn Nursery, contact the Nursery resident and visit/orient yourself to the day to day flow. Put together your rounds list
  + The census can get very high and you can easily feel time constrained.
  + You are the only resident there during the week, IT IS VERY IMPORTANT to be oriented prior to starting to ensure success
* Success here requires high efficiency and organizational skills
  + You will see a lot of “normal” well babies so it is important to be able to detect and note any abnormalities.
* There is a list that states when an attending **MUST** be called. [NICU Nighttime Resident Coverage.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/EZHOmCcY3LVFi1PGim4v1kgB4AXgzFcyC-M1NPv3zKc-uQ?e=zVYWFN)

**Where Things Are:**

* Workstation is behind the partition of the 6th floor nursing station – behind the unit clerk
  + There are enough computers for the med students to use in the morning.
  + In the afternoon you may use the work station in the nursery core by circ room
  + **Make sure three computers are always charged through the night to “survive” rounds.**
* Break room is to left when you exit the 6th floor elevators
  + There is a fridge to store food if you bring lunch.
    - There is a water cooler in the break room – Stay hydrated
  + In the breakroom there is a locker room and a restroom. The code is **1031**
    - In the back there are lockers for residents & medical students. Your belongings MUST go there or in the drawers at the workstation
  + Rest room can be found in hallway behind the work station and there is one in the locker room

**Algorithms / Stony Brook Nursery Resources**

* **Hypoglycemia**
  + [hypoglycemia birth to 4 hours.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/EdyIfEOXqKVIqk2koh65ynUB_FlksKcJknf6Bt9M-2E0cA?e=w9Q7EB)
  + [hypoglycemia 4-24 hours of life.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/ERpTiC4U2gRKgdjI0MFtpwgBWAEnY6J2TUwQda9TAkEtWA?e=7Mxh4a)
* **Hypothermia** 
  + [hypothermia algo.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/EZd97QaQunRBkrl7oiaArTUBpl2zkY3mp8G_v8S70OXQOQ?e=TNv1kz)
* **hydronephrosis**
  + [Hydronephrosis Guidelines - Copy.pptx](https://stonybrookmedicine.sharepoint.com/:p:/s/PediatricHospitalists/EROUNsKNM_RAny0545UDiU4BZ0H27fcbUbIj_zFVgc-Bvg?e=XVNzpt&nav=eyJzSWQiOjI1NywiY0lkIjo0MDQ3Mzg2NDUyfQ)
* **Hyperbilirubinemia** 
  + Screening algorithm - [Hyperbilirubinemia Screening 2024.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/Ea5z8DoRdMhPinJcfAopDZQBc9Ixt45hNK0sr8W23Pc7Rg?e=cYifU9)
  + Phototherapy treatment algorithm [Phototherapy Treatment 2024.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/EVgLy0unHfVNuOSKq-aIgQ8B19Wz8hi0ph7a_u5lpd7WpA?e=bBYh3u)
* **Kaiser Sepsis Score and Usage -** [GBS Guidelines.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/ERtPZbjJ8dNPvVd7yJzuwkgBj_95FF9KB_ZneXbsNB0BYA?e=LhCeow)

<https://neonatalsepsiscalculator.kaiserpermanente.org/>

* **Infants with Exposure to Significant Infectious Pathogens (HIV, HBV, HCV, etc)**
  + [NBN ID review 2024.docx](https://stonybrookmedicine-my.sharepoint.com/:w:/g/personal/lisa_clark_stonybrookmedicine_edu/ETJDCg5R_j1PlR5hHOshgu8BaK2J9K3sZwChz-rX5Okjzw?e=x5xn8v)
* **How to make a Rounds List**
  + [Rounds List for NBN.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/Ed-GNTy_0OJMkAdPmRqpg0cBy7RbgHE1pwyf0eAytTu4XQ?e=XbrS5c)

**Newborn Nursery’s Top Things You MUST KNOW Before Your First Day**

1. Early Onset Sepsis score (aka Kaiser Sepsis Score **(KSS)** within the first 4 hours of life, Notify Attending if YYR, YRR, or RRR.
   * GBS positive or unknown mothers
   * Prolonged rupture of membranes (>18 hours)
   * Maternal temp >=38.0 C
   * Gestational age <37 weeks
2. Visible jaundice in infants UNDER 24 hours of life is pathologic -- likely phototherapy
   * Send a stat bilirubin, hemoglobin/hematocrit, reticulocyte count, and Cord blood for typing
   * Call attending with result as soon as available
3. If OB documents concerns of mom with a Intraamniotic Infection (IAI), chroioamniotis, endometritis – calculate a KSS and contact attending (Maternal fever, foul smelling amniotic fluid, pus in fluid)
4. When a baby is born, the most urgent information to obtain are the prenatal infectious labs & any specific medical problems specific to the mother
   * If any prenatal infectious lab is positive, it is emergent to proceed with the applicable protocol (ID Guide for the nursery).
5. There is a hypoglycemia protocol with an algorithm that they follow. (STAY TUNED)
6. When in doubt, have the nurse save/collect the first urine & meconium for possible toxicology
   * See below for specifics but here are some common reasons for testing - current Substance Use Disorder (SUD) /misuse, known history of SUD in past 3 yrs, poor prenatal care, physician/midwife clinical judgement
7. Respiratory Distress - Tachypnea (RR>60). DDx includes normal transitioning, TTN, RDS, Mec Aspiration, hypoglycemia, temp instability, etc.
   * Do full exam, check oxygen sats and DS -> Monitored until improved
   * If in doubt, call the attending.
8. Signs requiring immediate concern for cardiorespiratory failure include (but are not limited to):
   * Cyanosis, apnea, saturations below 88%, unresponsiveness, retractions, and/or grunting
     1. Call Newborn Rapid Response, Stabilize patient, and Prepare for transfer to NICU.
   * **Resident, NP, or Attending should always be present with an unstable infant, or infant requiring NICU transfer**
9. The Pediatric Hospitalist listed in the computer as the Newborn Nursery Attending is the attending of record at any point in time and should be notified of babies with acute medical concerns
   * If a baby decompensates NICU transfer or RRT should never be delayed.
   * Notify also for reasons listed in “NICU Nighttime Resident Coverage in Newborn” document
10. Never write/sign a note on an infant you have not yet examined

**Newborn Nursery Expectations**

1. You learn how to appropriately care for the newborn and manage the floor, as outlined below.
2. You do NOT need to go to Afternoon Case Conference
3. You DO attend Grand Rounds and Wednesday lectures
4. Read the articles in the **Newborn Curriculum** over the course of the rotation.
   1. See specifics below
5. Be prepared discuss the following topics during your rotation

* Care of the Well Newborn
* Early Onset Sepsis
* Jaundice & Hyperbilirubinemia
* Hypoglycemia
* Infant Feeding
* Newborn Physical Examination
* Neonatal Abstinence Syndrome
* Newborn Respiratory Disorders
* Newborn Screening
* Circumcision
* Congenital Heart Disease
* Newborn Infectious Diseases

1. Attend education on breastfeeding one afternoon with Sara Glynn (Lactation Consultant)
   1. Review the breastfeeding/chest feeding videos (see below)
2. Read the power point on **Circumcision**, (in curricular materials section).
3. Have a **physical exam observed** by your attending, Susan Katz, NP or Lisa Clark, NP.

**Timing/Workflow/Rounds:**

1. **6AM-9:30 – Preround** 
   1. Arrive: Call NICU resident for overnight events (# 4-2000)
   2. Print a census of all patients note which babies are private patients.
      1. DO NOT SEE private patients or make cards for privates, but they need admission orders with correct attending listed
         1. Branch Pediatrics (Ancona, Stern, Flynn-Gameng)
         2. Kids Care Pediatrics (Anna Schwarz & Amy Leonard)
   3. Ask Charge RN (ideally night shift, between 6a and 7a) for a list of patients to be discharged. This can be done verbaly, or they can copy their “typed census” for you. If they are not there, the census is on the main desk in the nursery, and you can write down the discharges or photocopy it
   4. Complete all cards (see below for how to complete)
      1. New admits
      2. Updates on all
   5. Divide the service in into Team A and Team B ---- Until directed otherwise

**When there are 2 residents on, you will switch between Teams A & B every other week**

* + 1. Team A is 2/3 of the list (Complicated babies, NICU transfers, consults, late preterm NAS etc)
       1. you are responsible for the notes for these babies
    2. Team B babies 1/3 census, activated once census ≥ 12 babies (NON-complicated, mostly male infants)
       1. Yes complete team B card
       2. When only 1 resident, No notes for Team B babies, and complete departs for as able
       3. When 2 residents, 2nd resident must do Team B notes and departs
  1. Print A census for the Team A attending and B census for and Team B attending
  2. **Problems**
     1. **Page attending of clinical changes per the NICU Overnight resident nursery coverage document** 
        1. **including need for phototherapy or clinical illness that you are concerned about**
  3. **Place “Newborn Admission Power Plan” orders for ALL new babies, INCLUDING private babies.**
     1. Do **admission med rec** and **med history** when entering admission orders
     2. For private infants put appropriate attending in admission orders, if infant already admitted to ‘staff’ ask clerk to change to private attending name
     3. Check for glucose gel orders, if not in use the power plan to place them. The correct weight based dose will default
  4. Review potential discharges – Charge RN will have list of discharges, compare this to your anticipated discharges
     1. Remember, NAS babies will stay 5-7 days, NSVD babies 1-2 days, and C/S babies 2-3 days
  5. **Examine babies, and write notes** (work up to a goal of 10 notes per day by the end of your rotation)
     1. Priorities: Babies with overnight events -> Pending discharged (identify barriers) -> New admissions -> NAS -> Interims
        1. **TIP**: Wear gloves (new babies are not washed for the first 24 hours of life)
        2. **TIP**: Use an alcohol swab to clean your stethoscope before placing on the baby.
        3. **TIP**: Bring ophthalmoscope, red reflex to be done day of admission and discharge
  6. Ask mother about health of her other children if applicable, specific concerns are newborn jaundice, poor weight gain, congenital diseases, sepsis or NICU admissions
     1. Interview mother while examining baby. Pertinent discussion includes confirming her medical information, asking about health of other children (issues with jaundice, troublesome weight loss, congenital disease, NICU histories)
     2. **Write your note AFTER seeing each baby.**
     3. Complete the departs for pending discharges – last minute updates can be done on rounds
  7. **This rotation can be overwhelming.** Talk to your attending and NPs for help with work flow
     1. **Always do the cards first**, even if you do not see the babies / finish the notes so you can present on rounds

1. **9:30am – noon - Rounds**
   1. **Talk with your attending about problem babies when they first arrive**
      1. **High weight loss (>8%), poor feeding, resp issues, elevated bilis, etc.**
   2. Organize the cards for rounds as follows
      1. Discharges New Admissions NAS Interims (as this is the order that most attendings like to round).
2. **After rounds-5pm**
   1. Follow up on anything from the AM
   2. Prep departs/discharges for the following day, Give anticipatory guidance.
   3. Start cards when baby is born, and see all the new admits that arrive to the floor before 3pm
   4. Run the list with the attending in the afternoon to go over updates
3. **5pm – You’re done!**
   1. Sign-out to the NICU resident

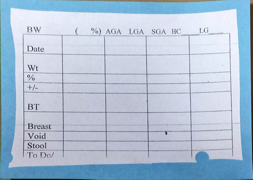
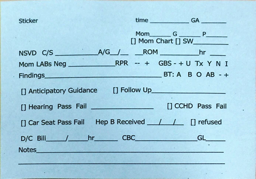
* NICU x4-2000
* Sign-out babies that have active issues, NAS, potential night discharges, pending or abnormal labs (T/D bili, etc), any baby you predict may have issues overnight (hypoglycemia), concerning KSS
* Discuss cut off to call attendings on labs and discharges, most attendings want to be notified for weight loss > 6.5% and bili > 6.5, but discuss cut offs with attending before sign out

**Computer Tips:**

* Become familiar with the Resident View -> Neonate Workflow, much of the information you need is on this page
* Set up your “Rounds List.” This will help you navigate the lab results/information of all babies at once. See below for link on how to set it up
  + [Rounds List for NBN.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/Ed-GNTy_0OJMkAdPmRqpg0cBy7RbgHE1pwyf0eAytTu4XQ?e=XbrS5c)

**The Cards:**

1. Every staff baby gets a card filled out. --- THEY ARE YOUR LIFELINE and will help you keep track as you care for the baby & prepare for discharge (See image of card below)
   1. In mom’s EMR use the “OBGYN H&P” in documents tab, “Results Flowsheets” -> “Delivery Records” tab, and Lab results tab to fill in cards. If SBU affiliated, ultrasounds can be found in clinical notes under “OBGYN ultrasound” or in the radiology tab, otherwise in mom’s paper chart
      1. Maternal labs HIV, HCV, HBV, and RPR are done prenatally **AND** on admission
         1. **Admission labs MUST** be documented in newborns admission note as per DOH - these results are CAPITALIZED when pulled in to your note ----- If all 4 labs are not back when you write your note, **check back later!! You or the attending can addend the note with the updated labs.**
      2. Jot down any maternal history that is pertinent to the infant
      3. Note if a SW cs is needed (see below for indications)
   2. In baby’s EMR use “Resident View” -> “Neonate Workflow”
      1. If the data has not populated to infant chart, you may find it in moms chart, under “Results Flowsheets” & delivery record”.
      2. You can pull the info in yourself by going to Mom’s chart -> Result copy -> click on infant and “ok”.
         1. All things in mint green have not yet been pulled over
2. Document [] Vit K and [] Ery if given or refused. Refusal is becoming more common, and getting missed!
3. Document GBS status, treatment, and KSS if it is required to be done (see below for add’l info)
4. Document maternal blood type.
   1. Order “Cord Blood Typing” for ALL Rh Negative mothers, ALL mothers who are Antibody POSITIVE, and for O+, ab neg mothers who meet following criteria: Anticipate discharge of newborn prior to 36 HOL (most NSVD babies), sibling with history of ABO incompatibility/jaundice requiring PTX, infants < 38 weeks GA
5. Car seat test – check if required (infant < 37 weeks, or < 2,500 g)
6. Back of Card
   1. Weights – use Fenton growth chart. SGA < 10th percentile. LGA > 90th percentile.
      1. The “%” refers to % weight lost from BIRTH WEIGHT
         1. Neonate Workflow -> Measurements will calculate the % weight loss for you
      2. The “+/-“ refers to the amount (in grams) lost or gained from THE DAY PRIOR



* **Hard/Paper Charts:**
  + Baby charts are Blue Moms are Maroon/Red
    - These charts/binders contain patient stickers and prenatal records
      * + If maternal information is not available in the EMR, Check the hard/paper chart
        + If paper chart empty ask the Unit Clerk to call the mom’s OB office.

**Admission Management & Note:**

**1. Assessing Infant Risk for Early Onset Sepsis (EOS) -- Kaiser Sepsis Score KSS**

Calculated for ALL infants at risk of early onset sepsis (EOS), WITHIN 4 hours of birth, OR if infants develop signs or symptoms of sepsis

Risk factors as follows:

1. Gestational age less than 37 weeks (and ≥ 34 weeks)
2. GBS positive or Unknown (regardless of treatment). If planned c-section with NO labor, cervical changes, or ROM, then no GBS abx required.
3. Maternal fever ≥ 38 ⁰C during labor or 1 hour after delivery or concern for Intraamniotic infection (IAI, endometritis, chorioamnitis, foul smelling newborn/amniotic fluid, concern for infected placenta)
4. Prolong rupture of membranes (ROM) over 18 hours.
5. Need for resuscitation/ signs of clinical illness at birth
6. Symptomatic infants, or infants with vital sign instability or clinical exam abnormalities within the first 24 hours of life

Calculating the KSS – <https://neonatalsepsiscalculator.kaiserpermanente.org/>

* Incidence of Early Onset Sepsis - Stony Brook Incidence (0.6/1000)
* Know maternal antibiotics administered PRIOR TO delivery, stratified as below:
  + GBS specific antibiotics = Penicillin G, Ampicillin, and Cefazolin
  + No Antibiotics = Clindamycin, Vancomycin, as they do not target GBS well enough
  + Broad Spectrum = Amp/Gent, other cephalosporins, fluoquniolones, piperacillin/tazobactam, carbapenems or any combination of antibiotics that includes an aminoglycoside or metronidazole
* Management – Interpretation of EOS Risk Score & Management
  + The result in white is the risk of EOS in the infant per 1000 births at birth.
    - Risk is then further stratified by the physical exam and vital signs of infant into green, yellow, and red categories.
  + Physical exam findings:
    - Well Appearing – No persistent physiologic abnormalities
    - Equivocal (trickiest group) – ONE persistent vital signs/PE abnormality lasting ≥ 4 hours or TWO persistent vital sign/PE abnormalities lasting ≥ 2 hours. Categories include HR, RR, Temp instability, and respiratory distress.
    - Clinical Illness – Infant needed oxygen, ventilation, vasopressors, or concern for neonatal encephalopathy/perinatal depression (seizures, Apgar score < 5 at 5 min of life)

Physical exam + Risk Assessment = Plan of care (see example below)

Green – continue routine care

Yellow 1 – “observation only,” Observe in nursery with q3-4 hour vital signs. Urgent MD evaluation and possible NICU transfer if further progression of illness develops

Yellow 2 – “Blood culture,” transfer to NICU for Blood Culture and IV Antibiotics required

Red – transfer to NICU for Blood Culture and IV Antibiotics required

* **Document your findings! You must write a separate note documenting the KSS**

Go to “Documents”  Encounter Pathway  search “Newborn Nursery Event”  open

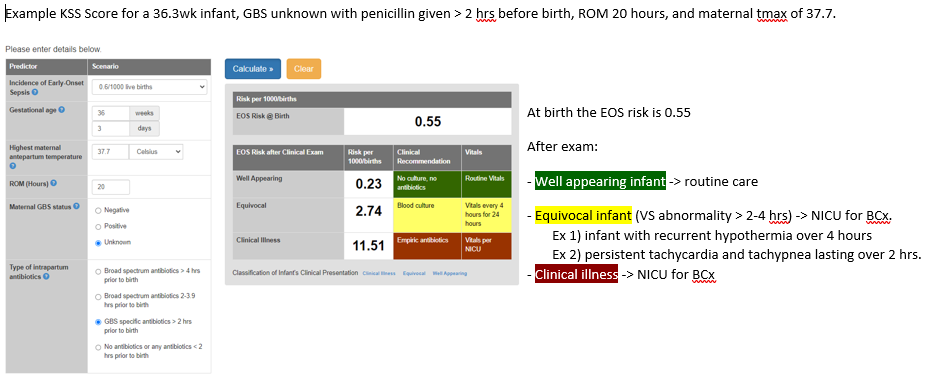
Screenshot the KSS & paste in an event note

Write your assessment and plan based on your exam and vital signs. Is infant well appearing, equivocal, or clinically ill?

**Notify attending if equivocal or clinically ill.**

Include the entire chart, as shown below, so your work can be checked

Further details on documents on curriculum website.



**2. Urine Toxicology Orders**

* Indications to ordering urine and meconium toxicology on infants:
* Current Substance Use Disorder or misuse
* Known history of Substance Use Disorder in the last 3 years
* Late to care prenatal care
  + first visit beyond 20 weeks
  + sporadic prenatal care defined as less than 8 visits (suggesting the patient was seen less than once monthly)
    - This does NOT include mothers who TRANSFERRED their care late – and had sufficient care at the prior location.
* No prenatal care
* Physician/midwife clinical judgement
* Orders: “Maternal Newborn Urine Toxicology Careset” and check off all 4 tests.

**3. Refusal of Vitamin K**

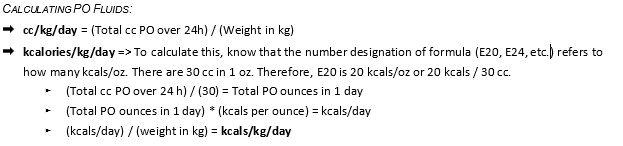
* If Vitamin K refused, form provided by RNs and education should be done within 6 hours. NICU resident to do if infant born overnight.
* In depart attach “Vitamin K Deficiency Bleeding in the Newborn”

**4. Social work Consults - order as Social work Inpatient**

1. Any mother with history of mental health issues – it allows SW to review signs/sx of postpartum depression and provide resource
2. Domestic violence in past 5 years
3. History of intrauterine fetal demise AND concern for difficulty coping/anxiety
4. Concern for or known substance use/misuse. Documented Substance use disorder (current or in the last 3 years). Prescribed pain medications for a medical diagnosis can be referred based on clinical judgement.
   1. If toxicology is positive for illicit medication that was not prescribed, CPS report/referral will be made by Social Worker
5. Insufficient prenatal care (as defined above)
6. Insurance issues
7. Housing needs (ex. Family is homeless, lives in shelter and requires arrangements, etc.)
8. Adoption planning
9. Infant with significant medical issue (Ex. Trisomy, cleft palate, intrauterine exposure to HIV

**5. Neonatal Abstinance Syndrome Babies**

* Infants who had intrauterine exposure to opiates, benzodiazepines, amphetamines, cocaine, or other psychotropic medications. Can be due to appropriately taken prescriptions OR misuse. Most of our mothers are in recovery on prescribed maintenance medication.
* Infants usually monitored 5-7 days to ensure appropriate weight gain, stable vital signs, and controllable symptoms. Once mother is discharged infant will be transferred into the nursery for care. A parent may stay with infant as much as they want, other visiting as per nursing
* Breastfeeding – Allowable as long as no use of non-prescribed illicit medications, and the medications and doses are safe ([LactMed](https://www.ncbi.nlm.nih.gov/books/NBK501922/)). Most infants will need additional supplementation due to withdrawal process
* Admission orders: Admitted to “Special Care Nursery” and initiate Neonatal Abstinence Powerplan
  + Urine toxicology and mec toxicology should be collected. Notify attending/NP if parental refusal to discuss plan
  + Check off infant for 24kcal formula –
    - **If infant is having diarrhea/significant weight loss, we will transition them to 24 kcal similac sensitive formula. This will need you need to put in communication order for 24 cal sensitive formula so it is ordered**
  + Check off speech pathology consult. PT and social work consults also always needed
* Modified Finnegan NAS Scorning by the nurses to monitor infants treatment. Found in EMR under Results FlowsheetsAssessments
  + - Medication typically indicated if 3 scores persistently > 8-10
* In your note:
  + Cures act info to consider:
    - Is significant other aware of all information? If not should confidentially document
  + Record the range of NAS Modified Finnegan scores for the past 24 hours
  + Note infant’s weight loss/gain, # and consistency of stools
  + Calculate the number of kcals/kg/day they eat. Most of these patients are on 24 kcal/oz formula.



**Opiate Orders:**

* If baby is on morphine and it is time for a dose change, ENTER ORDER CHANGE EARLY in the day -- pharmacy not so fast
  + Check with RN on when to change the dose so RN has current dose and we can get next dose with no gap/delay .
* **Always check with the nurse practitioner Lisa Clark and the attending’s note to determine plans for opiate weaning. The protocol is printed on the bulletin board in the nursery core AND on the SB curriculum website.**
* This is complicated and it’s best to make sure everyone is on the same page. Lisa is our expert on this topic.

**\*\*\* NEVER start a baby on morphine OR wean a baby on morphine WITHOUT discussing with the attending and NP!**

**Admission Note**

1. “Newborn H&P”
   1. Put in your favorites: “Documents”  “Pre-completed”  search “Newborn H&P”  Save
2. When the note first opens you will get a pop up. UNCHECK “measurements from flowsheet” and click OK
3. HPI section, include maternal or prenatal complications
   1. You DO NOT need to write a full HPI. Note significant maternal history, abnormal ultrasound/prenatal labs
      1. Example, uncomplicated infant: “Newborn male w/o any significant maternal or prenatal complications.”
      2. Example, complicated infant: “Ex 36wk infant, born via stat C/S for NRFHT, maternal hx of GDM on insulin”
4. HISTORY section of your template note, **YOU MUST pull in the “Maternal Delivery Information”.**
   1. Pull in “transcribed” prenatal labs, maternal admission labs (RPR, HCV, HBV, HIV – CAPITALIZED), GBS status, mode of delivery (NSVD or C/S), APGARS, ROM time, blood type, etc.
      1. DOH mandate: Must have all 4 admission labs documented in Newborn H&P. If not back when you sign your note, present on rounds so attending can add to note
   2. If information is missing, but is available in mom’s chart you can use copy results to bring it into baby’s chart (as noted above)
5. Assessment and Plan
   1. Note any plan for significant maternal history or infant findings.
      1. Ex – on Glucose protocol if mom had GDM, or infant SGA/LGA
   2. Note KSS if it needed to be calculated (see below), and if infant is in Green, Yellow, or Red zone, and your plan (ex. Continue monitoring vs needs NICU transfer)
   3. Note if SW consult ordered, don’t need to specify why as child may eventually read notes when older
      1. Indicate if urine tox and mec tox ordered

**\*\*\* You should NEVER sign a note for an infant you have not examined.**

**Interim Management & Notes**

1. On back of card note weight change, # feeds, voids, stools, bili level (if note)
   1. Think of your plan for infants with poor feeding, high weight loos, high bili levels, low outputs
2. Indicate if any important medical changes (Ex. Consults, NICU evaluations)
3. Give anticipatory guidance
4. Ensure PMD in baby’s banner bar, tell family when to make follow up apt
5. Progress note
   1. There are pre-completed newborn nursery progress notes
   2. “Documents”  “Pre-completed”  search “Newborn Progress Notes”  save to favorites & open.

**Discharge Management & Notes**

**Discharges are the number one priority in the morning after you have addressed sick infants.**

**\*\* If you’re concerned infant not meeting criteria for discharge based on the below, discuss with attending at the start of rounds!**

**Departs:**

**Must have correct PMD/Practice, F/u typicall 1-2 days, call to confirm/schedule apt**

**Physician note: Blurb saying infant is doing well, and highlight of concerns (ex. Hydronephrosis, needs f/u US and urology)**

**Education: 1- Laying your baby down to sleep (eng/sp), 2- When you feed me formula (eng/sp),**

**3- NBN Discharge Instructions (eng), or NICU Discharge Instructions Spanish**

Order: “Newborn Nursery Discharge Power Plan”

For provider responsible for dictation, write your own name. Only NAS babies will need a discharge summary.

Indicate if Breast fed (includes if getting supplment), or exclusive formula feeding

1. **To be discharged, infant must meet the following criteria:**
   1. Bilirubin within appropriate range
      1. Use bilitool.org, Inpatient viewpoint -> neonate overview will provide hours of life (IT working on implementing updates)
         1. If mom is O+, ab neg, and infant’s bilirubin is within 3 of the phototherapy threshold, order “Cord Blood Typing” and let the nurse know to send down the requisition. (enter communication order)
            1. Other reasons to obtain cord blood typing:

All moms Rh negative

All moms Antibody (Ab) positive

Any moms O+, ab negative, but: Infant is < 38 wks GA, Sibling history of jaundice, discharge at < 36 HOL, infant bilirubin levels with rate of rise > 0.2

* + - 1. Follow the hyperbilirubinemia screening algorithm,& advance to phototherapy algorithm as needed.
         1. Screening algorithm - [Hyperbilirubinemia Screening 2024.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/Ea5z8DoRdMhPinJcfAopDZQBc9Ixt45hNK0sr8W23Pc7Rg?e=cYifU9)
         2. Phototherapy treatment algorithm [Phototherapy Treatment 2024.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/EVgLy0unHfVNuOSKq-aIgQ8B19Wz8hi0ph7a_u5lpd7WpA?e=bBYh3u)
      2. If infant has high bilirubin: Review infants I/Os and weight loss.
         1. Is this breastfeeding jaundice?
         2. Does infant need a feeding plan?
         3. Speak to the attending or NP (non-urgently) if you’re concerned about feeding to get a plan in action
  1. Weight loss less normal for age, and adequate number of voids/stools for age
     1. Weight <10% below birth weight or high for age. Neonate work flow -> neonate measurements
     2. High weight loss is a problem (8-10% should be always addressed, & weight loss > 90th percentile on NEWT should be discussed).
        1. Use this link to help determine age / mode of delivery appropriate weight loss norms for age.
           1. Newborn Weight Loss Tool (NEWT) - <https://newbornweight.org/>
        2. Bring up when attending first comes in for rounds--- GET UP STREAM!
     3. Based on Newborn Weight Loss Tool, Weight loss < 6.5-7% at 25 HOL is above 90th percentile for loss.
  2. Feeding Voiding Stooling appropriately
  3. PMD appointment within 1-3 days pending age and status of newborn
     1. Check correct PMD name listed in banner bar of baby
        1. If not correct, correct it or the actual PMD will NOT get the depart faxed to them
           1. A PMD can be added or changed by clicking “PM Conversation” at top toolbar, then clicking “Provider Update” and choose “provider update” from drop down. You can then type the PMD’s last name under where it says “Primary Care Physician”
        2. Instruct families to follow up as below:
  + Infants younger than 24 hours, follow up within 24 hours of discharge
  + Infants 24 to 48 hours of age, follow up within 48 hours of discharge
  + Infants older than 48 hours, follow up within 72-96 hours of age
  1. Anticipatory guidance given ( see below)
  2. Depart process complete include Dx, med rec, patient education (NBN\_Discharge\_Instructions\_SBUH(Custom)), follow up date
  3. Hearing screen completed --- Can be found in resident view or depart – Check depart if a follow up required
     1. If failed, urine CMV must be in process before discharge and audiology follow up appt scheduled
  4. CCHD screen passed also can be found in depart or resident view
     1. Pulse ox check of right arm compared to right leg. One sat has to be above 95% and there can not be more then 3% difference between the two readings.
     2. If baby failed once - repeat If fails twice -- notify attending TRANSFER TO NICU
  5. G6PD in process
  6. All premature babies <37 weeks, or infants with birth weight <2500g, or infants with congenital airway anomalies (ex. trisomy 21) will need a car seat test prior to discharge
  7. Hepatitis B vaccine given OR provided education & documented reason deferred – (MAR or neonate workflow immunization)
  8. Metabolic screen (PKU) obtained and in process (RNs usually check on this before sending home)
  9. Discharge Note

1. **Early Discharge Considerations: (Age 25-36 Hours of Life)**
   1. If mom O+, anitbody neg cord blood type result to be included in depart with maternal blood type
   2. PMD follow up NEXT DAY is ideal, but can do within 24-48 hours in some cases – check with attending
   3. Adequate feeding
      1. Good bottle intake or at least 2 successful breastfeeds with good latch scores, with normal output
   4. Weight loss should be less than 6.5%, or with clear feeding plan established
   5. Observation At LEAST 36 hrs in hospital if at high risk for sepsis based on KSS (GYR, GRR)
2. This rotation
   1. You do NOT go to Afternoon Case Conference
   2. You do attend Grand Rounds and Wednesday lectures.
      1. **Depending on the census, try to come in earlier on Wed-- you need to be done with cards by the start of Grand Rounds at 8am.**
      2. **You will then go to Wednesday lectures, so prep your discharges, finish the cards and then as many notes as you can and check in with your attending with any concerns/questions prior to going to Grand Rounds.**
      3. **You can write on the printed attending census any small problems that need adjusting (ex. High bilis, high weight loss).**
      4. **Notify the attending of any big issues (ex. Respiratory issues, phototherapy) prior to leaving the unit.**

**Anticipatory Guidance:**

Everything is important. HOWEVER, new families are tired, it is important to try to get a few KEY things across about infant care.

The best way people learn anything is to actively engage in it – so making it conversational will be most effective.

Additionally - Each attending may also have a different style, so observe them doing this at the beginning and see what works best for you.

***You can introduce the topic “So now I’d like to give you some tips and reminders about care of the newborn”***

Based on the needs of the patient, you can tailor the following information:

**Normal newborn care**

* Feed every 2-3 hours. Wake the infant up on schedule until birth weight has been regained
* Write down babys output – goals are noted in the booklet. Notify your pediatrician if output is below normal.
* **Umbilical cord** falls off around 7-10 days. Until then keep it dry and above the diaper. No alcohol application needed. Sponge bathe infant only - do not submerge area until after the cord has fallen off and healed.
* **Skin care**: Avoid lotions, creams or oils unless directed by a doctor. Avoid direct sunlight during summer, especially between 10a-4p
* **For baby girls,** there may be some thick white discharge or even bloody discharge the first few days. This is a mini-period as the baby is clearing maternal hormones from the delivery. It is normal to have, and to not have.

**Illness in the Newborn:**

* **If baby appears sick, lethargic, feeding poorly, or is off, take a rectal temperature. Must got to ED for temperature below 97⁰ or greater than or equal to 100.4⁰**
* Increasing jaundice or yellowing of the skin can be normal (especially of the face, and chest), but too much can be problematic. Notify your doctor if you notice the baby’s arms/hands/lower legs are beginning to turn yellow, feeding poorly, or lethargic.
* The best way to prevent illness is by encouraging good hand washing (soap/water or hand sanitizer) prior to handling the baby. Advise not to let others touch/kiss the baby’s hands/lips, since they can get their hands to their mouths and ingest germs.
* Vaccines also prevent illness. Encourage TDAP booster for all family members/caregivers. Flu vaccine for all >6 months old in the home during October-March, and COVID 19 vaccines.
* **If family ‘refused HBV**’ **you can use these prompts to help encourage vaccination**:
* ***“I see the hepatitis B vaccine has not yet been given to the baby, would you like it now or before you are discharged?”*** If not, ask why not, and if they have questions about the vaccine. Can assure them it is since use vial without preservatives. Document conversation in your note. If they consent, you will need to reorder vaccine.
* Other talking points:
  + “Hepatitis B is very transmissible, lives on surfaces up to 7 days, and many people do not realize they have it. It is associated with liver failure and liver cancer. To protect your baby, I’d like to offer it again.”
  + “Most of the pediatricians in the area agree with the American Academy of Pediatrics recommendations to give it within the first 12-24 hours of life/prior to leaving the hospital to best protect the baby

**Safety:**

* **Back to Sleep (SIDS prevention) & the ABCs**.  Baby sleeps **alone** in the **crib** or bassinet on his/her **back**, no pillows or stuffed animals on a FIRM mattress. Never in bed with a sleeping adult.
  + Support person can help keep nursing moms awake, or remove baby from mom if she falls asleep
* **Car seats:** Parents must have one before leaving the hospital. **Should be a 5 point harness, that is rear facing until at least the age of 2,** but ideally to continue until the infant outgrows rear facing car seat based on manufacturers recommendations.
* **Smoke Exposure**: Second hand smoke increases the risk of SIDS and Asthma.
  + Opt to Quit referral in Ad Hoc section of Power chart – if interested, family member can sign up for this NYS Quitline ‘

**Transfers to NICU:**

* Anytime a baby is ill If possible, discuss with attending or the private attending BEFORE consulting NICU or transferring.
* If the baby looks critically ill or concerning, CALL A RAPID RESPONSE FIRST. No one will ever fault you for this.
* If your attending agrees that the infant needs NICU evaluation, call over to the NICU to discuss with a NICU resident or fellow, who will come to evaluate the infant.
* If the NICU accepts the transfer:
  + Always go with the baby to NICU.
  + When you get there, sign out to the resident (and fellow, if necessary).
  + As with any transfer, write a thorough transfer note including the reason for the transfer.

**Transfers from NICU:**

Ask the overnight NICU resident & check the census every morning to make sure there were no new transfers overnight. No one likes surprises!

* NICU transfers are first accepted by the **attending**
  + Babies who are 35-36 weeks may be transferred to NBN after 24 hours of monitoring and determined to be stable.
  + Babies must weigh > 2100g at the time of transfer.
  + Term newborns with any physiologic instability/delayed transition may be transferred to NB after consult with the accepting physician
* Then you will receive sign out from NICU
  + Ask who infant’s PMD is, if it is a private pt the private MD must be called to accept
  + Be sure to put or check for the Newborn Nursery Admission Power Plan (or Late Preterm Power Plan) if needed.or NICU to NB transfer Powerplan
  + You do not need to write a NICU to NB acceptance note; however, if the infant arrived overnight, you NEED to write progress note.
  + Every transfer baby will need a card filled out
* Notify the charge nurse so they can prepare
* If mother is being discharged that day, typically infant should be discharged from NICU instead of coming over.
* You do not need to write a NICU to newborn acceptance note; however, if the infant arrived overnight, you will need to write a progress note.
* Every transfer baby will need a card filled out, just like all other babies in the Newborn Nursery.

**Nurse Practitioners**

* **Lisa Clark** and **Susan Katz (Use Teams Ap to contact them)**: Newborn Nurse Practitioners
* The NPs help “run” the nursery by assisting the team with any number of tasks. They spend a considerable amount of time with the many psychosocial issues as well as with any NAS babies.
* It should not be assumed that they will be available to assist with morning rounds or pre-rounding work, but they are a great resource for questions if available. They can also help with babies you are worried about.
* One of the **NPs should observe one physical exam of the newborn**, and document progress in new innovations

**Breastfeeding/Chestfeeding Education**

* **Sara Hickert:** lactation consultant
  + Sara will schedule a time to meet with you, review breastfeeding, and see a consult
  + Prior to meeting with her make sure to complete the breastfeeding modules on the curriculum website
    - Helpful increase your comfort in providing better patient care for giving anticipatory guidance and addressing concerns.
* **Additional resources for review (HIGHLY RECOMMENED)**
  + Supporting and Promoting Breastfeeding, Chestfeeding, and Lactation in Health Care Settings
  + [Supporting and Promoting Breastfeeding | University at Albany](https://www.albany.edu/cphce/supporting-and-promoting-breastfeeding-chestfeeding-and-lactation-health-care-settings)
    - Webinars -> Complete Hospital/Birthing Settings Part 1 and Part 2
  + CHAMPS
    - [Breastfeeding | Human Medicine Universal on Vimeo](https://nam11.safelinks.protection.outlook.com/?url=https%3A%2F%2Fvimeo.com%2F460534113%2Fa4f6186fa6&data=05%7C02%7CCandice.Foy%40stonybrookmedicine.edu%7C5060042a0b5d4a89729208dc6b70d91a%7Ceafa1b31b194425db36656c215b7760c%7C0%7C0%7C638503379647961000%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C0%7C%7C%7C&sdata=kmKoRvdZikOktpkhIJDtlWPlb7jMdi7ThebhrhtpyzI%3D&reserved=0)

**Medical Students:**

* There will be 3-4 new third year medical students each week
* They are there only for 1 week of their pediatrics rotation
* Mondays, teach them to help fill out the I&Os and weights on the cards.(you are responsible for accurate info on those cards – thier work)
* Starting Tuesday they should examine as many babies as they can and present 2-3 patients on rounds
* They should write their own notes, but this does not count as an official note for the baby
  + When the census is reasonable, medical student babies should be examined by the resident as well
  + and resident should write their own note.
* HOWEVER: **your primary job is ALWAYS to get the cards done**, regardless of the presence of medical students.
* **Prioritize patient care and your work** before teaching medical students.
* Goal for the medical students is to learn what a normal newborn exam is
  + Teach as much as you can, even if it’s only pearls of wisdom here & there. They’ll appreciate it & they will love you. We all need some love!

**Weekend Call:**

* Weekends are structured exactly like weekdays
  + ONLY Difference is there will be a senior resident there for short-call
  + They do discharges first, and if there is time they can help see additional babies until 11AM.
* You should arrive by 6AM
  + Most attendings like to arrive early
  + They will round with the senior first which gives you some more time to finish up your work
* If another resident is covering a weekend day, sign out any pending issues to NICU on-call Friday evening.
* In the beginning of the year, it is nice to orient the weekend person & give them a heads up of potentially complicated patients or discharges

**“NICU Nighttime Resident Coverage in Newborn” Document**

**Expectations**

* Prior to calling the Newborn attending, **evaluate the infant you are calling about and present a suggested plan**
* Any time a newborn is evaluated, the resident must document the evaluation in the EMR.
* The parents of the newborn should be updated on the assessment and plan
* **Algorithms located on Newborn Nursery Curriculum website, and in Cerner power plans, as well as below**

**Situations Requiring Discussion with the Newborn Attending**

* Infant requires transfer to the NICU
* Mother of infant positive for HepBsAg, HIV or RPR. Guidelines [NBN ID review 2024.docx](https://stonybrookmedicine-my.sharepoint.com/:w:/g/personal/lisa_clark_stonybrookmedicine_edu/ETJDCg5R_j1PlR5hHOshgu8BaK2J9K3sZwChz-rX5Okjzw?e=x5xn8v)
* Any time an infant is started on phototherapy
* Yellow or Red Kaiser Sepsis Score – based on infant’s physical exam findings (see below)
* Infant with a critical lab value (examples given below, but are not limited to these examples)
  + Hyperbilirubinemia for age
    - Call attending if needs phototherapy or infant is DAT positive
    - Release infant blood type if within 3 of initiation of phototherapy
      * Screening algorithm - [Hyperbilirubinemia Screening 2024.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/Ea5z8DoRdMhPinJcfAopDZQBc9Ixt45hNK0sr8W23Pc7Rg?e=cYifU9)
      * Phototherapy treatment algorithm [Phototherapy Treatment 2024.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/EVgLy0unHfVNuOSKq-aIgQ8B19Wz8hi0ph7a_u5lpd7WpA?e=bBYh3u)
  + Hypoglycemia – follow algorithm – NICU transfer typically indicated for baby with 3rd glucose <45 after 4 HOL despite frequent feeding/supplementation, Post feed glucose <35 requires immediate transfer to nursery if infant >4HOL, infant is both hypoglycemia and hypothermic. Consider hypothermia and obtaining rectal temp for recurrent hypoglycemia
    - [hypoglycemia birth to 4 hours.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/EdyIfEOXqKVIqk2koh65ynUB_FlksKcJknf6Bt9M-2E0cA?e=w9Q7EB)
    - [hypoglycemia 4-24 hours of life.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/ERpTiC4U2gRKgdjI0MFtpwgBWAEnY6J2TUwQda9TAkEtWA?e=7Mxh4a)
  + CBC with **WBC >35** **or I:T ratio >= 0.20** (other WBC counts may be flagged as critical, but do not require a call if <35**)**
* Concerning Physical Findings or Symptoms **(examples below, NOT limited to these examples) – remember to adjust the KSS based on exam findings**
  + Bilious emesis
  + Hypothermia (rectal temp <36C) – Remember to check dstick.
  + Babies with hypothermia <36C should not be fed. Infant should go to NICU if hypoglycemic and hypothermic.
    - [hypothermia algo.docx](https://stonybrookmedicine.sharepoint.com/:w:/s/PediatricHospitalists/EZd97QaQunRBkrl7oiaArTUBpl2zkY3mp8G_v8S70OXQOQ?e=TNv1kz)
  + Tachypnea lasting beyond 6 hours of life **OR** associated with retractions/resp distress/hypoxia at any age.
  + New tachypnea in a baby >6 HOL.
    - Infants with RR >60 or other signs of respiratory distress should not be fed
    - Make sure to monitor for hypoglycemia.
  + Abnormal or unstable vital signs (i.e. hypoxia, bradycardia, tachycardia, etc)
  + Jaundice before 24 hours of life
  + Concern for testicular torsion (hard, swollen testicle, scrotal bruising or erythema)
  + Possible seizure-like activity
  + Anal atresia
  + NAS scores: 3 or more scores >8, or 2 consecutive scores >12
  + Failed CCHD *(see Protocol for CCHD Screening)*
  + Lack of urine output since birth at age >24 HOL
  + >8% weight loss with <2 stools or wet diapers in the past 24 hours and exclusively breastfeeding or other feeding difficulty
    - Unless a plan regarding supplementation was signed out, please discuss recommendations for supplementation with the attending prior to discussing with the family.

**Suggested Learning Schedule and Recommended Readings:**

Just like the Wards, there are weekly reading topics that you should read and be ready to discuss with the attending, as well as a breastfeeding course, all available on the curriculum website

* Week 1:
* Care of the Well Newborn
* Early Onset Sepsis Screening
* Jaundice and Hyperbilirubinemia
* Week 2:
  + Hypoglycemia
  + Infant Feeding, including Breastfeeding
  + Newborn Physical Exam
* Week 3:
  + Neonatal Abstinence Syndrome
  + Newborn Respiratory Disorders
  + Newborn Screening
* Week 4:
  + Circumcision
  + Congenital Heart Disease
  + Newborn Infectious Diseases