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HIE CASE QUESTION SET

Baby Boy C. Specimen extract, 12 of 99 questions

DRAFT - Subject to review and verification by retaining counsel and/or expert witness.

SAMPLE WORK PRODUCT. Prepared from a synthetic record set created for demonstration. There is no real patient, mother, provider or facility. A live question set answers all 99. This specimen answers 12 in full so the format can be read in a few minutes.

What This Is

A birth injury case turns on a finite set of questions. There are 99 of them for hypoxic ischemic encephalopathy, grouped in 15 sections, and they run from the mother's pre-pregnancy history through the life care plan. I answer them from the record. Every answer carries a citation to the page it came from, and in the hyperlinked version every citation is a live link to that page.

Seventeen of the 99 are not mine to answer. Those turn on clinical judgment rather than on what the chart says, and they are set out separately at the end of this document with the record evidence assembled against each one and no opinion attached. That section is built for your expert to open first.

The distinction is the whole point. I am not telling you what the medicine means. I am telling you what the record says, where it says it, and which questions your expert now needs to answer.

Coverage

#	SECTION	QUESTIONS	ROUTED TO EXPERT
1	Maternal Demographics and Pre-Pregnancy History	7	0
2	Prenatal Course	8	**1**
3	Labor Onset and Early Labor	7	0
4	Intrapartum Fetal Monitoring	7	**2**
5	Delivery	8	**1**
6	Neonatal Resuscitation	9	**1**
7	Umbilical Cord Gas Analysis	5	**2**
8	Cooling Eligibility Assessment	6	**3**
9	NICU Course, Therapeutic Hypothermia	6	0
10	NICU Course, General Management and Organ Function	8	**2**
11	Neuroimaging	5	**2**
12	Placental Pathology	3	**2**

#	SECTION	QUESTIONS	ROUTED TO EXPERT
13	Ongoing Neurological Status and Developmental Outcome	12	**1**
14	School Records and Academic Performance	4	0
15	Life Care Plan and Damages	4	0
	TOTAL	**99**	**17**

Sections 14 and 15 are not exercised in this specimen. The synthetic child is seven months old, so there are no school records and no life care plan to summarize.

Answered From the Record

Twelve questions, drawn across nine sections. Format and citation discipline are identical in the full set.

Q14. Was Group B Streptococcus status documented, and was intrapartum prophylaxis administered if indicated?

Section 2, Prenatal Course

Yes to both. The 36 week rectovaginal culture is recorded as positive.

Penicillin G 5 million units was administered intravenously at 07:55 on 06/14/2025, with 2.5 million units every four hours thereafter. Delivery occurred at 15:10, so the first dose preceded delivery by more than four hours.

[Mother-Riverbend p.1] [Mother-Riverbend p.7] [HIE-Diag p.4]

Q17. Was labor spontaneous, induced or augmented? If induced, what was the indication and method?

Section 3, Labor Onset and Early Labor

Induced. The documented indication is gestational diabetes mellitus managed on insulin.

Method was an oxytocin infusion, started at 08:10 at 2 milliunits per minute, titrated to 12 by 11:00, decreased to 8 at 11:05, and discontinued at 14:31.

[Mother-Riverbend p.2] [Mother-Riverbend p.9]

Q21. What was the admission fetal heart rate tracing?

Section 3, Labor Onset and Early Labor

Baseline 140 beats per minute, moderate variability, accelerations present, no decelerations. Recorded as Category I at 07:20 on 06/14/2025.

[Mother-Riverbend p.2] [Mother-Riverbend p.3]

Q27. Were intrauterine resuscitation measures attempted? Document each with timing.

Section 4, Intrapartum Fetal Monitoring

Four measures are documented, each with a time.

10:15 maternal repositioning to left lateral. 11:05 oxytocin decreased from 12 to 8 milliunits per minute. 11:40 intravenous fluid bolus, 500 mL lactated Ringer's. 12:20 oxygen 10 liters by non-rebreather mask.

No tocolysis and no amnioinfusion appear in the produced record.

[Mother-Riverbend p.3]

Q28. Was a fetal scalp pH or fetal scalp stimulation test performed?

Section 4, Intrapartum Fetal Monitoring

Neither appears anywhere in the produced record. Recorded as a gap rather than as a negative finding.

[Mother-Riverbend pp.3-4]

Q32. If cesarean delivery: what was the indication, the decision to incision interval and the decision to delivery interval?

Section 5, Delivery

Indication recorded as Category III fetal heart tracing with sustained fetal bradycardia.

Decision documented at 14:31. Incision 15:02. Delivery 15:10. The operative record states a decision to incision interval of 31 minutes and a decision to delivery interval of 39 minutes.

[Mother-Riverbend p.4] [Mother-Riverbend p.5]

Q38. What were the Apgar scores at 1, 5 and 10 minutes?

Section 6, Neonatal Resuscitation

1 at one minute, 3 at five minutes, 5 at ten minutes. The same three values appear in both the operative report and the resuscitation record.

[Mother-Riverbend p.5] [Infant-Riverbend p.1]

Q43. Were epinephrine administrations required? Timing and route?

Section 6, Neonatal Resuscitation

One dose. Epinephrine 0.02 mg/kg by endotracheal tube at four minutes of life, recorded at 15:14.

For sequence: positive pressure ventilation at one minute with a heart rate of 48, chest compressions at two minutes, intubation at three minutes with a 3.5 tube at 9 cm, epinephrine at four minutes, heart rate 68 and rising at five minutes.

[Infant-Riverbend p.1] [Infant-Riverbend p.6]

Q49. Provide all cord gas values: pH, base excess, pCO2, pO2 and bicarbonate, arterial and venous.

Section 7, Umbilical Cord Gas Analysis

Umbilical artery: pH 6.87, pCO2 82 mmHg, pO2 11 mmHg, bicarbonate 11.4 mmol/L, base deficit 18.4 mmol/L.

Umbilical vein: pH 7.04, pCO2 61 mmHg, base deficit 12.1 mmol/L.

Specimens collected 06/14/2025 at 15:12, two minutes after delivery.

[HIE-Diag p.1] [Mother-Riverbend p.5]

Q51. Is the arteriovenous difference consistent with true cord gas sampling, rather than two venous samples?

Section 7, Umbilical Cord Gas Analysis

Yes. The two specimens differ by 0.17 in pH and by 21 mmHg in pCO2, and the laboratory report records that difference as confirmation that two separate vessels were sampled.

[HIE-Diag p.1]

Q62. Was the full 72 hour cooling course completed? If terminated early, what was the reason?

Section 9, NICU Course, Therapeutic Hypothermia

Completed. Cooling initiated 06/14/2025 at 19:40 and rewarming initiated 06/17/2025 at 19:40, exactly 72 hours later. Normothermia achieved 06/18/2025 at 03:20.

Esophageal temperature is recorded as maintained between 33.2 and 33.8 C throughout, against a target of 33.5 C. Rewarming is recorded at the standard rate of 0.5 C per hour.

[Infant-StColumba p.1] [Infant-StColumba p.4]

Q90. Is a feeding tube in place?

Section 13, Ongoing Neurological Status and Developmental Outcome

Yes. A laparoscopic gastrostomy tube was placed 06/30/2025 with no documented complication.

The precipitating study is a videofluoroscopic swallow study of 06/26/2025 documenting silent aspiration with thin liquids and delayed pharyngeal swallow initiation, with a recommendation of nothing by mouth. At discharge on 07/03/2025 the infant was feeding entirely by gastrostomy tube.

[Infant-StColumba p.6] [Infant-StColumba pp.15-16]

Routed To Your Expert

These are the questions in this case that turn on clinical judgment. The record evidence is assembled against each one. No opinion is offered on any of them, and none should be read into the ordering.

	THE QUESTION	WHAT THE RECORD SHOWS	SOURCE
Q25	Describe the evolution of the tracing through labor. When did it transition from Category I to Category II, and when, if ever, did it become Category III?	Category I at 07:20. Category II from 10:00. Category III documented at 14:12 with variability absent. Delivery 15:10.	[Mother-Riverbend pp.3-4]
Q26	When was a physician first notified of a non-reassuring tracing, and what was the documented response?	12:50 provider notified of recurrent late decelerations and minimal variability. 14:14 first page. 14:22 second page. 14:31 obstetrician at bedside. No documented response to the first page.	[Mother-Riverbend pp.3-4]
Q33	What was the decision to delivery interval for the emergent cesarean?	Decision 14:31. Incision 15:02. Delivery 15:10. Documented decision to incision 31 minutes, decision to delivery 39 minutes.	[Mother-Riverbend p.4] [Mother-Riverbend p.5]
Q50	What is the base excess on the arterial cord gas?	Arterial base deficit 18.4 mmol/L. Arterial pH 6.87.	[HIE-Diag p.1]
Q52	Was the infant evaluated for therapeutic hypothermia eligibility, and what was the documented assessment?	All three criteria documented as met: cord pH 6.87 with base deficit 18.4; Apgar 3 at five minutes with positive pressure ventilation and chest compressions; moderate to severe encephalopathy on modified Sarnat.	[Infant-StColumba p.1]

	THE QUESTION	WHAT THE RECORD SHOWS	SOURCE
Q55	What was the time from birth to cooling initiation?	Birth 15:10. Passive cooling begun 15:45. Servo-controlled active cooling initiated 19:40, recorded as 4 hours 30 minutes of life.	[Infant-Riverbend p.2] [Infant-StColumba p.1]
Q57	Was the infant transferred to a cooling-capable NICU, what was the total transport time, and was cooling maintained throughout?	Departure 17:52, arrival 18:44. Axillary temperature 34.8 C on departure, 34.2 C on arrival. Birth to cooling-centre arrival recorded as 3 hours 34 minutes. No vital signs recorded between 17:52 and 18:44.	[Infant-Riverbend p.4]
Q71	Were nucleated red blood cells reported on any neonatal complete blood count, and what is the serial trend through clearance?	First CBC 06/14/2025 reports nucleated RBC 34 per 100 WBC, flagged high. No serial NRBC values appear in the produced set, so the clearance trend cannot be built from these records.	[HIE-Diag p.7]
Q75	Is the MRI pattern consistent with acute intrapartum injury, or are there findings suggesting chronic or pre-existing injury?	MRI day of life 5 reports restricted diffusion in the ventrolateral thalami, posterior putamina, perirolandic cortex and posterior limb of the internal capsule, with an elevated lactate peak on spectroscopy. Follow-up MRI at six months reports established injury in the same distribution with volume loss.	[Infant-StColumba p.3] [HIE-Diag p.6]
Q78	What were the placental pathology findings?	Placenta 470 grams, below the 10th percentile. Retroplacental hematoma consistent with abruption. Maternal vascular malperfusion with accelerated villous maturation. Focal avascular villi. Meconium staining of the membranes. Acute chorioamnionitis not identified.	[Mother-Riverbend p.6]
Q79	Was meconium pigment in macrophages identified?	The pathology report records meconium staining of the membranes but does not address meconium pigment within macrophages either way. The question cannot be answered from the produced report.	[Mother-Riverbend p.6]
Q80	Serial head circumference from birth through the most recent measurement.	Two data points only in the produced set: 45th percentile at birth, below the 3rd percentile at corrected age 7 months. Intervening well-child measurements are not in the	[Infant-StColumba p.7]

	THE QUESTION	WHAT THE RECORD SHOWS	SOURCE
		production.	

Record Gaps

Gaps in the production, recorded as observations rather than as conclusions about the care rendered.

1. The fetal monitoring interpretation log is produced. The underlying tracing is not, in either paper or archived electronic form. Questions 23 to 26 can be answered only from the interpretation. (Ref: [Mother-Riverbend pp.3-4])

2. No fetal scalp pH and no scalp stimulation test appears anywhere in the record. (Ref: [Mother-Riverbend pp.3-4])

3. The placental pathology report addresses meconium staining of the membranes but is silent on meconium pigment within macrophages, so question 79 cannot be answered from it. A supplemental report or the slides would settle it. (Ref: [Mother-Riverbend p.6])

4. Nucleated red blood cells are reported once, on the first complete blood count. No serial values appear, so the clearance trend called for by question 71 cannot be built. (Ref: [HIE-Diag p.7])

5. Head circumference appears at two points only, birth and corrected age 7 months. Intervening well-child measurements are not in the production. (Ref: [Infant-StColumba p.7])

6. The neonatal transport record documents departure and arrival times but no vital signs between 17:52 and 18:44. (Ref: [Infant-Riverbend p.4])

7. Narrative NICU progress notes are produced for 06/15 through 06/19/2025 only. Flowsheets and the medication record cover the balance of the admission. (Ref: [Infant-StColumba pp.8-14])

RIVERBEND REGIONAL MEDICAL CENTER
Prenatal Record - Summary Flow Sheet

Patient: A.C. (mother) MRN: [REDACTED]
DOB: [REDACTED]

PRENATAL CARE SUMMARY

Practice: Riverbend Women's Health Associates

Provider: Marisol Etchegaray, MD

Gravida / Para: G2 P1-0-0-1

Estimated date of delivery: By 9 week ultrasound, dating firm.

PROBLEM LIST

Gestational diabetes mellitus, A2, diagnosed at 27 weeks, managed on insulin.

Prior cesarean delivery? No. Prior vaginal delivery at term, uncomplicated.

Group B Streptococcus: positive on 36 week rectovaginal culture.

PRENATAL LABORATORY

Blood type A positive, antibody screen negative. Rubella immune. HIV nonreactive. Hepatitis B surface antigen negative. RPR nonreactive.

SERIAL VISITS

Twelve documented prenatal visits between 8 and 39 weeks. Fundal height appropriate throughout. Blood pressures 104/62 to 128/78. No proteinuria documented.

THIRD TRIMESTER ULTRASOUND

At 36 weeks 2 days: estimated fetal weight 3,410 grams, 72nd percentile. Amniotic fluid index 14.2 cm. Cephalic presentation. Anterior placenta.

LABOR AND DELIVERY ADMISSION

Date and time: 06/14/2025 07:20

Gestational age: 39 weeks 2 days

Provider: Marisol Etchegaray, MD

Reason for admission: Scheduled induction of labor for gestational diabetes on insulin

ADMISSION ASSESSMENT

Maternal vital signs: temperature 98.2 F, heart rate 84, blood pressure 118/70.

Cervical examination: 2 cm dilated, 60 percent effaced, minus 2 station, vertex.

Membranes intact. Reports good fetal movement.

ADMISSION FETAL HEART TRACING

Baseline 140 beats per minute. Moderate variability. Accelerations present. No decelerations. Category I.

PLAN

Admit for induction. Oxytocin protocol per unit standard. Group B Streptococcus positive, penicillin G prophylaxis. Continuous electronic fetal monitoring. Insulin infusion per endocrine protocol with hourly glucose.

RIVERBEND REGIONAL MEDICAL CENTER
Labor and Delivery - Fetal Monitoring Interpretation 07:20 to 13:00

Patient: A.C. (mother) MRN: [REDACTED]
DOB: [REDACTED]

ELECTRONIC FETAL MONITORING - INTERPRETATION LOG

Date: 06/14/2025

TIME	BASELINE	VARIABILITY	ACCELS	DECELS	CATEGORY	INITIALS
07:20	140	moderate	present	none	I	AT RN
08:00	140	moderate	present	none	I	AT RN
09:00	142	moderate	present	occasional early	I	AT RN
10:00	145	moderate	present	occasional variable	II	AT RN
11:00	148	moderate	absent	variable, recurrent	II	AT RN
12:00	150	minimal	absent	variable, recurrent	II	AT RN
13:00	152	minimal	absent	late, recurrent	II	AT RN

INTERVENTIONS DOCUMENTED

10:15 Maternal repositioning to left lateral.

11:05 Oxytocin decreased from 12 to 8 milliunits per minute.

11:40 Intravenous fluid bolus 500 mL lactated Ringer's.

12:20 Oxygen 10 liters by non-rebreather mask.

12:50 Provider notified of recurrent late decelerations and minimal variability.

RIVERBEND REGIONAL MEDICAL CENTER
Labor and Delivery - Fetal Monitoring Interpretation 13:00 to 15:10

Patient: A.C. (mother) MRN: [REDACTED]
DOB: [REDACTED]

ELECTRONIC FETAL MONITORING - INTERPRETATION LOG, CONTINUED

Date: 06/14/2025

TIME	BASELINE	VARIABILITY	ACCELS	DECELS	CATEGORY	INITIALS
13:30	152	minimal	absent	late, recurrent	II	AT RN
14:00	155	minimal	absent	late, recurrent	II	AT RN
14:12	150	absent	absent	late, recurrent	III	AT RN
14:20	118	absent	absent	prolonged decel begins	III	AT RN
14:26	92	absent	absent	bradycardia sustained	III	AT RN
14:40	88	absent	absent	bradycardia sustained	III	AT RN
15:02	84	absent	absent	bradycardia sustained	III	AT RN

COMMUNICATION AND INTERVENTIONS DOCUMENTED

14:12 Category III tracing documented by bedside nurse. Charge nurse notified.

14:14 Page placed to Dr. Etchegaray.

14:22 Second page placed to Dr. Etchegaray. No documented response to the first page.

14:31 Dr. Etchegaray at bedside. Decision for emergency cesarean delivery documented.

14:38 Anesthesia paged. Operating room notified.

15:10 Delivery.

Documented interval from decision to incision: 31 minutes. Documented interval from decision to delivery: 39 minutes.

OPERATIVE REPORT - CESAREAN DELIVERY

Date and time: 06/14/2025, incision 15:02, delivery 15:10

Surgeon: Marisol Etchegaray, MD

Assistant: Tobias Wrenfield, MD

Anesthesia: General endotracheal, due to urgency

Indication: Category III fetal heart tracing, sustained fetal bradycardia

Procedure: Primary low transverse cesarean delivery

Estimated blood loss: 800 mL

FINDINGS

Live born male infant delivered from cephalic presentation. Nuchal cord times one, loose, reduced at delivery. Amniotic fluid thick and meconium stained. Placenta delivered intact with a retroplacental clot estimated at 15 percent of the maternal surface, sent to pathology.

NEONATAL STATUS AT DELIVERY

Infant limp, apneic and pale at delivery. Handed immediately to the neonatal resuscitation team. Apgar scores 1 at one minute, 3 at five minutes, 5 at ten minutes.

CORD BLOOD GASES

Arterial: pH 6.87, pCO2 82 mmHg, base deficit 18.4 mmol/L.

Venous: pH 7.04, pCO2 61 mmHg, base deficit 12.1 mmol/L.

RIVERBEND REGIONAL MEDICAL CENTER
Placental Pathology Report

Patient: A.C. (mother) MRN: [REDACTED]
DOB: [REDACTED]

SURGICAL PATHOLOGY REPORT - PLACENTA

Date received: 06/14/2025

Pathologist: Ingrid Solheim-Baptiste, MD

GROSS DESCRIPTION

Single placenta weighing 470 grams, below the 10th percentile for gestational age. Three vessel cord, 52 cm, with a marginal insertion. Membranes green stained.

MICROSCOPIC DESCRIPTION

Sections show accelerated villous maturation with increased syncytial knots. Focal avascular villi. A retroplacental hematoma with adjacent villous stromal hemorrhage and decidual necrosis is identified. Acute chorioamnionitis is not identified.

DIAGNOSIS

1. Placenta with retroplacental hematoma consistent with placental abruption. 2. Maternal vascular malperfusion with accelerated villous maturation. 3. Meconium staining of the membranes. 4. No acute chorioamnionitis.

NURSING ADMISSION ASSESSMENT 06/14/2025

Allergies: none known. Prenatal records on file. Birth plan reviewed.

Group B Streptococcus positive. Penicillin G 5 million units intravenously at 07:55, then 2.5 million units every four hours.

RIVERBEND REGIONAL MEDICAL CENTER
Labor and Delivery - Oxytocin and Insulin Administration

Patient: A.C. (mother) MRN: [REDACTED]
DOB: [REDACTED]

MEDICATION ADMINISTRATION RECORD

Oxytocin infusion started 08:10 at 2 milliunits per minute, titrated to 12 by 11:00, decreased to 8 at 11:05, discontinued 14:31.

Insulin infusion per endocrine protocol. Hourly maternal glucose 92 to 128 mg/dL.

RIVERBEND REGIONAL MEDICAL CENTER
Delivery Room - Neonatal Resuscitation Record

Patient: Baby Boy C. (infant) MRN: [REDACTED]
DOB: [REDACTED]

NEONATAL RESUSCITATION RECORD

Date and time of birth: 06/14/2025 15:10

Gestational age: 39 weeks 2 days

Birth weight: 3,486 grams

Team: Priyamvada Raghunath, MD (neonatology); Callum Adeyemi, RRT; Ines Kovac, RN

RESUSCITATION TIMELINE

TIME	MINUTE	EVENT
15:10	0	Limp, apneic, pale. No spontaneous respiratory effort.
15:10	0	Warmed, dried, stimulated. Airway positioned.
15:11	1	Positive pressure ventilation initiated. HR 48. APGAR 1.
15:12	2	Chest compressions started, 3:1 with PPV.
15:13	3	Intubated, 3.5 endotracheal tube secured at 9 cm.
15:14	4	Epinephrine 0.02 mg/kg via endotracheal tube.
15:15	5	HR 68 and rising. Compressions stopped. APGAR 3.
15:17	7	Umbilical venous catheter placed. Normal saline 10 mL/kg.
15:20	10	HR 132. Poor tone. No spontaneous effort. APGAR 5.
15:24	14	Transferred to the neonatal intensive care unit, intubated.

CORD GASES

Arterial pH 6.87, pCO2 82, base deficit 18.4. Venous pH 7.04, pCO2 61, base deficit 12.1.

NEONATAL INTENSIVE CARE UNIT ADMISSION NOTE

Date and time: 06/14/2025 15:40

Provider: Priyamvada Raghunath, MD

ASSESSMENT

Term male infant, 39 weeks 2 days, delivered by emergency cesarean for a Category III tracing with sustained bradycardia, requiring intubation and chest compressions, with an arterial cord pH of 6.87 and a base deficit of 18.4.

NEUROLOGIC EXAMINATION AT 30 MINUTES OF LIFE

Lethargic, does not arouse to stimulation. Tone diffusely decreased with no spontaneous movement. Pupils sluggishly reactive. Suck absent. Moro absent. Gag weak. Sarnat stage: moderate to severe encephalopathy.

ASSESSMENT AND PLAN

Hypoxic ischemic encephalopathy. Meets criteria for therapeutic hypothermia by both blood gas criteria and neurologic examination. Passive cooling initiated at 15:45 pending transfer. St. Columba Children's Hospital neonatal transport activated.

Transport team notified at 16:05. Estimated arrival 17:30.

NEONATAL TRANSPORT RECORD

Transport team: St. Columba Children's Hospital Neonatal Transport

Departure from Riverbend: 06/14/2025 17:52

Arrival at St. Columba: 06/14/2025 18:44

Infant remained intubated and on passive cooling throughout transport. Axillary temperature on departure 34.8 C. On arrival 34.2 C.

Documented total time from birth to arrival at the cooling center: 3 hours 34 minutes.

RIVERBEND REGIONAL MEDICAL CENTER
NICU - Medication Administration

Patient: Baby Boy C. (infant) MRN: [REDACTED]
DOB: [REDACTED]

MEDICATION ADMINISTRATION RECORD 06/14/2025

15:14 Epinephrine 0.02 mg/kg endotracheal, one dose.

15:17 Sodium chloride 0.9 percent 10 mL/kg via umbilical venous catheter.

15:50 Ampicillin and gentamicin, first doses, per sepsis protocol.

16:10 Dextrose 10 percent bolus 2 mL/kg for glucose of 38 mg/dL.

ST. COLUMBA CHILDREN'S HOSPITAL
NICU - Admission and Cooling Initiation

Patient: Baby Boy C. (infant) MRN: [REDACTED]
DOB: [REDACTED]

NEONATAL INTENSIVE CARE UNIT ADMISSION

Date and time: 06/14/2025 18:44

Provider: Anselm Trubetzkoy, MD, Neonatology

THERAPEUTIC HYPOTHERMIA

Servo-controlled whole body cooling initiated at 19:40 on 06/14/2025.

Documented age at initiation of active cooling: 4 hours 30 minutes of life. Target esophageal temperature 33.5 C, to be maintained for 72 hours, followed by rewarming at 0.5 C per hour.

ELIGIBILITY DOCUMENTATION

Criterion A met: arterial cord pH 6.87, base deficit 18.4.

Criterion B met: Apgar 3 at five minutes, positive pressure ventilation and chest compressions required at birth.

Criterion C met: moderate to severe encephalopathy on modified Sarnat examination.

NEUROLOGIC EXAMINATION ON ADMISSION

Stuporous. Hypotonic. Spontaneous movement absent. Suck absent, Moro absent, grasp absent. Pupils constricted and sluggish. Modified Sarnat: severe.

MAGNETIC RESONANCE IMAGING, BRAIN, WITHOUT CONTRAST

Date: 06/19/2025, day of life 5

Interpreting radiologist: Marguerite Anselm-Oyelaran, MD, Pediatric Neuroradiology

Technique: Axial and sagittal T1, axial T2, diffusion weighted imaging with ADC map, susceptibility weighted imaging, MR spectroscopy of the basal ganglia.

FINDINGS

Restricted diffusion is present within the bilateral ventrolateral thalami and the posterior putamina, with corresponding low ADC values. Restricted diffusion also involves the perirolandic cortex bilaterally and the posterior limb of the internal capsule, where normal T1 hyperintensity is absent.

No intracranial hemorrhage. No mass effect. Myelination otherwise appropriate for age.

MR spectroscopy demonstrates an elevated lactate peak at 1.3 parts per million within the basal ganglia, with a reduced N-acetylaspartate to choline ratio.

IMPRESSION

"Acute hypoxic ischemic injury in a basal ganglia and thalamus predominant pattern, with involvement of the posterior limb of the internal capsule and the perirolandic cortex. This pattern is associated with an acute profound hypoxic ischemic insult. Elevated lactate on spectroscopy supports recent injury."

ST. COLUMBA CHILDREN'S HOSPITAL
NICU - Cooling and Rewarming Course

Patient: Baby Boy C. (infant) MRN: [REDACTED]
DOB: [REDACTED]

THERAPEUTIC HYPOTHERMIA COURSE

Cooling initiated: 06/14/2025 19:40

Rewarming initiated: 06/17/2025 19:40

Normothermia achieved: 06/18/2025 03:20

COURSE DURING COOLING

Esophageal temperature maintained between 33.2 and 33.8 C throughout. Sinus bradycardia to the 90s, expected during cooling. Subcutaneous fat necrosis noted over the upper back on 06/17/2025.

Seizures treated with phenobarbital 20 mg/kg loading dose on 06/15/2025 at 03:10, a further 10 mg/kg at 05:50, and levetiracetam 40 mg/kg on 06/15/2025 at 11:20.

Extubated 06/18/2025. Required nasal cannula until 06/20/2025.

ORGAN INVOLVEMENT

Liver: AST peaked at 388 on day of life 1, trending down to 96 by 06/19/2025. Kidney: creatinine peaked at 1.6 on day of life 2, urine output nadir 0.4 mL/kg/hr, no renal replacement therapy required. Coagulopathy: fresh frozen plasma and cryoprecipitate on 06/14 and 06/15/2025.

DISCHARGE SUMMARY

Admission: 06/14/2025

Discharge: 07/03/2025

Attending: Anselm Trubetzkoy, MD

Discharge diagnoses: Hypoxic ischemic encephalopathy, severe; neonatal seizures; status post therapeutic hypothermia; transient renal and hepatic injury; coagulopathy of the newborn; feeding difficulty

HOSPITAL COURSE

Summarized above. Feeding was the rate limiting issue for discharge. Oral feeding was poorly coordinated with documented aspiration on a swallow study performed 06/26/2025. A gastrostomy tube was placed 06/30/2025.

CONDITION AT DISCHARGE

Persistent axial hypotonia with appendicular hypertonia. Fisted hands. Brisk reflexes with sustained ankle clonus bilaterally. Feeding entirely by gastrostomy tube.

DISCHARGE MEDICATIONS

Phenobarbital and levetiracetam at documented weight based doses.

ST. COLUMBA CHILDREN'S HOSPITAL
Outpatient Neurology Follow Up

Patient: Baby Boy C. (infant) MRN: [REDACTED]
DOB: [REDACTED]

PEDIATRIC NEUROLOGY FOLLOW UP

Date: 01/16/2026, corrected age 7 months

Provider: Oluwaseun Fairweather-Diaz, MD

EXAMINATION

Head circumference has fallen from the 45th percentile at birth to below the 3rd percentile. Persistent fisting. Truncal hypotonia with appendicular hypertonia and emerging dystonic posturing of the upper extremities. Does not sit unsupported. Does not roll. Visual tracking inconsistent.

ASSESSMENT

"Dyskinetic cerebral palsy secondary to neonatal hypoxic ischemic encephalopathy, with acquired microcephaly and global developmental delay. Gross Motor Function Classification System level anticipated at IV to V."

PLAN

Continue physical, occupational and speech therapy. Repeat MRI at 18 months. Continue gastrostomy feeds. Orthopedic referral for hip surveillance.

NICU DAILY PROGRESS NOTE 06/15/2025

Temperature per cooling protocol. Ventilator settings weaned as tolerated.

Neurologic examination unchanged: hypotonic, poor spontaneous movement.

Laboratory trends reviewed. See laboratory and imaging records.

Family updated at the bedside by the attending neonatologist.

NICU DAILY PROGRESS NOTE 06/16/2025

Temperature per cooling protocol. Ventilator settings weaned as tolerated.

Neurologic examination unchanged: hypotonic, poor spontaneous movement.

Laboratory trends reviewed. See laboratory and imaging records.

Family updated at the bedside by the attending neonatologist.

NICU DAILY PROGRESS NOTE 06/17/2025

Temperature per cooling protocol. Ventilator settings weaned as tolerated.

Neurologic examination unchanged: hypotonic, poor spontaneous movement.

Laboratory trends reviewed. See laboratory and imaging records.

Family updated at the bedside by the attending neonatologist.

NICU DAILY PROGRESS NOTE 06/18/2025

Temperature per cooling protocol. Ventilator settings weaned as tolerated.

Neurologic examination unchanged: hypotonic, poor spontaneous movement.

Laboratory trends reviewed. See laboratory and imaging records.

Family updated at the bedside by the attending neonatologist.

NICU DAILY PROGRESS NOTE 06/19/2025

Temperature per cooling protocol. Ventilator settings weaned as tolerated.

Neurologic examination unchanged: hypotonic, poor spontaneous movement.

Laboratory trends reviewed. See laboratory and imaging records.

Family updated at the bedside by the attending neonatologist.

ST. COLUMBA CHILDREN'S HOSPITAL
NICU - Nursing Flowsheets 06/14 to 06/18

Patient: Baby Boy C. (infant) MRN: [REDACTED]
DOB: [REDACTED]

NICU NURSING FLOWSHEETS

Continuous esophageal temperature, heart rate, blood pressure and oxygen saturation.

Hourly urine output recorded. Nadir 0.4 mL/kg/hr on 06/16/2025.

MEDICATION ADMINISTRATION RECORD

Phenobarbital 20 mg/kg load 06/15 03:10, 10 mg/kg 06/15 05:50, maintenance thereafter.

Levetiracetam 40 mg/kg 06/15 11:20, maintenance thereafter.

Ampicillin and gentamicin discontinued 06/17/2025 with negative cultures at 48 hours.

Fresh frozen plasma and cryoprecipitate 06/14 and 06/15/2025.

ST. COLUMBA CHILDREN'S HOSPITAL
Swallow Study Report

Patient: Baby Boy C. (infant) MRN: [REDACTED]
DOB: [REDACTED]

VIDEOFLUOROSCOPIC SWALLOW STUDY 06/26/2025

Impression: silent aspiration with thin liquids. Delayed pharyngeal swallow initiation.

Recommendation: nothing by mouth. Discuss enteral access.

ST. COLUMBA CHILDREN'S HOSPITAL
Gastrostomy Operative Note

Patient: Baby Boy C. (infant) MRN: [REDACTED]
DOB: [REDACTED]

OPERATIVE NOTE 06/30/2025

Laparoscopic gastrostomy tube placement. No complications documented.

RIVERBEND / ST. COLUMBA
Cord Blood Gas Report

Patient: Baby Boy C. (infant) MRN: [REDACTED]
DOB: [REDACTED]

UMBILICAL CORD BLOOD GAS REPORT

Collected: 06/14/2025 15:12

Facility: Riverbend Regional Medical Center

UMBILICAL ARTERY

pH 6.87 (ref 7.18 - 7.38) CRITICAL LOW

pCO2 82 mmHg (ref 32 - 66) HIGH

pO2 11 mmHg (ref 5 - 24)

Bicarbonate 11.4 mmol/L (ref 17 - 27) LOW

Base deficit 18.4 mmol/L (ref less than 12) CRITICAL HIGH

UMBILICAL VEIN

pH 7.04 (ref 7.25 - 7.45) LOW

pCO2 61 mmHg Base deficit 12.1 mmol/L HIGH

SPECIMEN VALIDATION

Arterial and venous pH differ by 0.17 and pCO2 by 21 mmHg, confirming that two separate vessels were sampled.

RIVERBEND / ST. COLUMBA
Microbiology and Sepsis Evaluation

Patient: Baby Boy C. (infant) MRN: [REDACTED]
DOB: [REDACTED]

MICROBIOLOGY

Blood culture collected 06/14/2025 at 15:50: no growth at 48 hours, final no growth at five days.

Cerebrospinal fluid was not obtained. The record documents that lumbar puncture was deferred due to coagulopathy.

Maternal Group B Streptococcus positive; intrapartum penicillin prophylaxis was administered at 07:55 on 06/14/2025, more than four hours before delivery.

PLACENTAL PATHOLOGY, CROSS REFERENCE

Acute chorioamnionitis was not identified. See the maternal chart.

RIVERBEND / ST. COLUMBA
Radiology - MRI Brain 12/22/2025

Patient: Baby Boy C. (infant) MRN: [REDACTED]
DOB: [REDACTED]

MAGNETIC RESONANCE IMAGING, BRAIN, WITHOUT CONTRAST

Date: 12/22/2025, age 6 months

Interpreting radiologist: Marguerite Anselm-Oyelaran, MD

FINDINGS

Interval volume loss within the bilateral putamina and ventrolateral thalami with abnormal T2 hyperintensity. Thinning of the posterior limb of the internal capsule bilaterally. Mild diffuse cerebral volume loss with ex vacuo ventricular prominence. Perirolandic cortical thinning.

IMPRESSION

"Established injury in a basal ganglia and thalamus predominant distribution, evolved from the acute findings of 06/19/2025. The appearance is characteristic of a remote acute profound hypoxic ischemic insult."

RIVERBEND / ST. COLUMBA
Laboratory - Complete Blood Counts

Patient: Baby Boy C. (infant) MRN: [REDACTED]
DOB: [REDACTED]

SERIAL COMPLETE BLOOD COUNTS

06/14 WBC 22.1 Hgb 14.1 Plt 118 nucleated RBC 34 per 100 WBC HIGH

06/16 WBC 14.8 Hgb 13.2 Plt 88

06/19 WBC 11.2 Hgb 12.4 Plt 212