**DATA COLLECTION FORM (PHASE 1)**

**BASIC STUDY INFORMATION**

Patient ID: \_\_\_\_\_\_\_\_\_\_\_\_\_

Date and time of study initiation: \_\_\_\_\_\_\_\_\_\_\_\_\_ (YYYY-MM-DD) \_\_\_\_\_\_\_\_\_\_\_\_ (HH:MM)

Date and time of study completion: \_\_\_\_\_\_\_\_\_\_\_\_\_ (YYYY-MM-DD) \_\_\_\_\_\_\_\_\_\_\_\_ (HH:MM)

**DEMOGRAPHICS**

|  |  |  |
| --- | --- | --- |
| Year of birth: \_\_\_\_\_\_\_ | Sex: ☐ Male ☐ Female | Hours of life (at enrollment): \_\_\_\_\_\_\_\_ |
| Gestational age (at birth): \_\_\_\_\_\_ weeks \_\_\_\_\_\_ days | Birth weight: \_\_\_\_\_\_\_\_\_ grams |
| Diagnosis(es) at time of enrollment: |
| ☐ Perinatal asphyxia ☐ Anemia ☐ Apneas and bradycardias ☐ Bronchopulmonary dysplasia |
| ☐ Hydrocephalus ☐ Intraventricular hemorrhage ☐ Jaundice ☐ Necrotizing enterocolitis |
| ☐ Other, specify: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Treatments at enrollment: |
| ☐ Therapeutic hypothermia | ☐ Continuous positive airway pressure (CPAP) |
| ☐ Conventional mechanical ventilation (CMV) | ☐ High frequency ventilation (HFV) |
| ☐ Nasal intermittent positive pressure ventilation (NIPPV) | ☐ Not applicable/healthy infants |
| Patient group: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H |

|  |
| --- |
| A = healthy term infants in room air at enrollment B = term infants with perinatal asphyxia undergoing therapeutic hypothermia at enrollmentC = healthy preterm infants in room air at enrollment D = preterm infants on continuous positive airway pressure at enrollmentE = preterm infants on conventional mechanical ventilation at enrollmentF = preterm infants on high frequency ventilation at enrollment G = preterm infants on nasal intermittent positive end expiratory pressure at enrollmentH = preterm infants on continuous positive airway pressure at enrollment |

**HOURLY LOGS**

Day 1:

|  |
| --- |
| Date: Start Time: End Time: |
|  | baseline | 1h | 2h | 3h | 4h | 5h | 6h | 7h | 8h |
| Location of chest unit(Center, R or L side) |  |  |  |  |  |  |  |  |  |
| Location of limb unit (R-right, L-left, H-hand/wrist, F-foot) |  |  |  |  |  |  |  |  |  |
| Number of conventional wires |  |  |  |  |  |  |  |  |  |
| Axillary temperature (°C) |  |  |  |  |  |  |  |  |  |
| Room temperature (°C) |  |  |  |  |  |  |  |  |  |
| Air temperature (°C) & humidity (%) - 15cm from neonate |  |  |  |  |  |  |  |  |  |
| Kangaroo care(Y/N) |  |  |  |  |  |  |  |  |  |
| Nursing care(Y/N) |  |  |  |  |  |  |  |  |  |
| Medications(Write down any medication in use) |  |  |  |  |  |  |  |  |  |
| Phototherapy(Y/N) |  |  |  |  |  |  |  |  |  |
| Type of ventilatory support (CPAP, CMV, HFV, NIPPV) |  |  |  |  |  |  |  |  |  |
| Neonate location(incubator/crib) |  |  |  |  |  |  |  |  |  |
| Neonate position(s-supine, p-prone, side) |  |  |  |  |  |  |  |  |  |
| Sensor disconnection (N)/reasons\* |  |  |  |  |  |  |  |  |  |

\*A = x-ray, B = bath, C = cleaning, D = tests, E = transport, F = other

Photographs of the skin at sensor placement sites (place “✓” if done)

|  |  |  |  |
| --- | --- | --- | --- |
| Chest | ☐ Baseline (0h)  | Limb | ☐ Baseline (0h) |
| ☐ 8h | ☐ 8h |

Neonatal Infant Pain Scale – Day 1

|  |  |
| --- | --- |
| **Pain Assessment** | Score |
| **Facial Expression**  |  |
| 0 – Relaxed muscles  | Restful face, neutral expression  |
| 1 – Grimace | Tight facial muscles, furrowed brow, chin, jaw, (negative facial expression – nose, mouth, brow) |
| **Cry**  |  |
| 0 – No cry  | Quiet, not crying  |
| 1 - Whimper | Mild moaning, intermittent |
| 2 – Vigorous Cry  | Loud scream; rising, shrill, continuous (Note: silent cry may be scored if baby is intubated as evidenced by obvious mouth and facial movement.) |
| **Breathing Patterns** |  |
| 0 – Relaxed  | Usual pattern for this infant  |
| 1 – Change in Breathing  | Indrawing, irregular, faster than usual, gagging, breath holding |
| **Arms**  |  |
| 0 – Relaxed/Restrained | No muscular rigidity, occasional random movements of arms  |
| 1 – Flexed/Extended  | Tense, straight legs; rigid and/or rapid extension/flexion |
| **Legs** |  |
| 0 – Relaxed/Restrained | No muscular rigidity, occasional random movements of legs |
| 1 – Flexed/Extended  | Tense, straight legs; rigid and/or rapid extension/flexion |
| **State of Arousal**  |  |
| 0 – Sleeping/Awake | Quiet, peaceful, sleeping, or alert random leg movement |
| 1 – Fussy  | Alert, restless, thrashing |
| **TOTAL**  |  |

Rater: \_\_\_\_\_\_\_\_\_\_\_\_

Day 2:

|  |
| --- |
| Date: Start Time: End Time: |
|  | baseline | 1h | 2h | 3h | 4h | 5h | 6h | 7h | 8h |
| Location of chest unit(Center, R or L side) |  |  |  |  |  |  |  |  |  |
| Location of limb unit (R-right, L-left, H-hand/wrist, F-foot) |  |  |  |  |  |  |  |  |  |
| Number of conventional wires |  |  |  |  |  |  |  |  |  |
| Axillary temperature (°C) |  |  |  |  |  |  |  |  |  |
| Room temperature (°C) |  |  |  |  |  |  |  |  |  |
| Air temperature (°C) & humidity (%) - 15cm from neonate |  |  |  |  |  |  |  |  |  |
| Kangaroo care(Y/N) |  |  |  |  |  |  |  |  |  |
| Nursing care(Y/N) |  |  |  |  |  |  |  |  |  |
| Medications(Write down any medication in use) |  |  |  |  |  |  |  |  |  |
| Phototherapy(Y/N) |  |  |  |  |  |  |  |  |  |
| Type of ventilatory support (CPAP, CMV, HFV, NIPPV) |  |  |  |  |  |  |  |  |  |
| Neonate location(incubator/crib) |  |  |  |  |  |  |  |  |  |
| Neonate position(s-supine, p-prone, side) |  |  |  |  |  |  |  |  |  |
| Sensor disconnection (N)/reasons\* |  |  |  |  |  |  |  |  |  |

\*A = x-ray, B = bath, C = cleaning, D = tests, E = transport, F = other

Photographs of the skin at sensor placement sites (place “✓” if done)

|  |  |  |  |
| --- | --- | --- | --- |
| Chest | ☐ Baseline (0h)  | Limb | ☐ Baseline (0h) |
| ☐ 8h | ☐ 8h |

Neonatal Infant Pain Scale – Day 2

|  |  |
| --- | --- |
| **Pain Assessment** | Score |
| **Facial Expression**  |  |
| 0 – Relaxed muscles  | Restful face, neutral expression  |
| 1 – Grimace | Tight facial muscles, furrowed brow, chin, jaw, (negative facial expression – nose, mouth, brow) |
| **Cry**  |  |
| 0 – No cry  | Quiet, not crying  |
| 1 - Whimper | Mild moaning, intermittent |
| 2 – Vigorous Cry  | Loud scream; rising, shrill, continuous (Note: silent cry may be scored if baby is intubated as evidenced by obvious mouth and facial movement.) |
| **Breathing Patterns** |  |
| 0 – Relaxed  | Usual pattern for this infant  |
| 1 – Change in Breathing  | Indrawing, irregular, faster than usual, gagging, breath holding |
| **Arms**  |  |
| 0 – Relaxed/Restrained | No muscular rigidity, occasional random movements of arms  |
| 1 – Flexed/Extended  | Tense, straight legs; rigid and/or rapid extension/flexion |
| **Legs** |  |
| 0 – Relaxed/Restrained | No muscular rigidity, occasional random movements of legs |
| 1 – Flexed/Extended  | Tense, straight legs; rigid and/or rapid extension/flexion |
| **State of Arousal**  |  |
| 0 – Sleeping/Awake | Quiet, peaceful, sleeping, or alert random leg movement |
| 1 – Fussy  | Alert, restless, thrashing |
| **TOTAL**  |  |

Rater: \_\_\_\_\_\_\_\_\_\_\_\_

Day 3:

|  |
| --- |
| Date: Start Time: End Time: |
|  | baseline | 1h | 2h | 3h | 4h | 5h | 6h | 7h | 8h |
| Location of chest unit(Center, R or L side) |  |  |  |  |  |  |  |  |  |
| Location of limb unit (R-right, L-left, H-hand/wrist, F-foot) |  |  |  |  |  |  |  |  |  |
| Number of conventional wires |  |  |  |  |  |  |  |  |  |
| Axillary temperature (°C) |  |  |  |  |  |  |  |  |  |
| Room temperature (°C) |  |  |  |  |  |  |  |  |  |
| Air temperature (°C) & humidity (%) - 15cm from neonate |  |  |  |  |  |  |  |  |  |
| Kangaroo care(Y/N) |  |  |  |  |  |  |  |  |  |
| Nursing care(Y/N) |  |  |  |  |  |  |  |  |  |
| Medications(Write down any medication in use) |  |  |  |  |  |  |  |  |  |
| Phototherapy(Y/N) |  |  |  |  |  |  |  |  |  |
| Type of ventilatory support (CPAP, CMV, HFV, NIPPV) |  |  |  |  |  |  |  |  |  |
| Neonate location(incubator/crib) |  |  |  |  |  |  |  |  |  |
| Neonate position(s-supine, p-prone, side) |  |  |  |  |  |  |  |  |  |
| Sensor disconnection (N)/reasons\* |  |  |  |  |  |  |  |  |  |

\*A = x-ray, B = bath, C = cleaning, D = tests, E = transport, F = other

Photographs of the skin at sensor placement sites (place “✓” if done)

|  |  |  |  |
| --- | --- | --- | --- |
| Chest | ☐ Baseline (0h)  | Limb | ☐ Baseline (0h) |
| ☐ 8h | ☐ 8h |

Neonatal Infant Pain Scale – Day 3

|  |  |
| --- | --- |
| **Pain Assessment** | Score |
| **Facial Expression**  |  |
| 0 – Relaxed muscles  | Restful face, neutral expression  |
| 1 – Grimace | Tight facial muscles, furrowed brow, chin, jaw, (negative facial expression – nose, mouth, brow) |
| **Cry**  |  |
| 0 – No cry  | Quiet, not crying  |
| 1 - Whimper | Mild moaning, intermittent |
| 2 – Vigorous Cry  | Loud scream; rising, shrill, continuous (Note: silent cry may be scored if baby is intubated as evidenced by obvious mouth and facial movement.) |
| **Breathing Patterns** |  |
| 0 – Relaxed  | Usual pattern for this infant  |
| 1 – Change in Breathing  | Indrawing, irregular, faster than usual, gagging, breath holding |
| **Arms**  |  |
| 0 – Relaxed/Restrained | No muscular rigidity, occasional random movements of arms  |
| 1 – Flexed/Extended  | Tense, straight legs; rigid and/or rapid extension/flexion |
| **Legs** |  |
| 0 – Relaxed/Restrained | No muscular rigidity, occasional random movements of legs |
| 1 – Flexed/Extended  | Tense, straight legs; rigid and/or rapid extension/flexion |
| **State of Arousal**  |  |
| 0 – Sleeping/Awake | Quiet, peaceful, sleeping, or alert random leg movement |
| 1 – Fussy  | Alert, restless, thrashing |
| **TOTAL**  |  |

Rater: \_\_\_\_\_\_\_\_\_\_\_\_

Day 4:

|  |
| --- |
| Date: Start Time: End Time: |
|  | baseline | 1h | 2h | 3h | 4h | 5h | 6h | 7h | 8h |
| Location of chest unit(Center, R or L side) |  |  |  |  |  |  |  |  |  |
| Location of limb unit (R-right, L-left, H-hand/wrist, F-foot) |  |  |  |  |  |  |  |  |  |
| Number of conventional wires |  |  |  |  |  |  |  |  |  |
| Axillary temperature (°C) |  |  |  |  |  |  |  |  |  |
| Room temperature (°C) |  |  |  |  |  |  |  |  |  |
| Air temperature (°C) & humidity (%) - 15cm from neonate |  |  |  |  |  |  |  |  |  |
| Kangaroo care(Y/N) |  |  |  |  |  |  |  |  |  |
| Nursing care(Y/N) |  |  |  |  |  |  |  |  |  |
| Medications(Write down any medication in use) |  |  |  |  |  |  |  |  |  |
| Phototherapy(Y/N) |  |  |  |  |  |  |  |  |  |
| Type of ventilatory support (CPAP, CMV, HFV, NIPPV) |  |  |  |  |  |  |  |  |  |
| Neonate location(incubator/crib) |  |  |  |  |  |  |  |  |  |
| Neonate position(s-supine, p-prone, side) |  |  |  |  |  |  |  |  |  |
| Sensor disconnection (N)/reasons\* |  |  |  |  |  |  |  |  |  |

\*A = x-ray, B = bath, C = cleaning, D = tests, E = transport, F = other

Photographs of the skin at sensor placement sites (place “✓” if done)

|  |  |  |  |
| --- | --- | --- | --- |
| Chest | ☐ Baseline (0h)  | Limb | ☐ Baseline (0h) |
| ☐ 8h | ☐ 8h |

Neonatal Infant Pain Scale – Day 4

|  |  |
| --- | --- |
| **Pain Assessment** | Score |
| **Facial Expression**  |  |
| 0 – Relaxed muscles  | Restful face, neutral expression  |
| 1 – Grimace | Tight facial muscles, furrowed brow, chin, jaw, (negative facial expression – nose, mouth, brow) |
| **Cry**  |  |
| 0 – No cry  | Quiet, not crying  |
| 1 - Whimper | Mild moaning, intermittent |
| 2 – Vigorous Cry  | Loud scream; rising, shrill, continuous (Note: silent cry may be scored if baby is intubated as evidenced by obvious mouth and facial movement.) |
| **Breathing Patterns** |  |
| 0 – Relaxed  | Usual pattern for this infant  |
| 1 – Change in Breathing  | Indrawing, irregular, faster than usual, gagging, breath holding |
| **Arms**  |  |
| 0 – Relaxed/Restrained | No muscular rigidity, occasional random movements of arms  |
| 1 – Flexed/Extended  | Tense, straight legs; rigid and/or rapid extension/flexion |
| **Legs** |  |
| 0 – Relaxed/Restrained | No muscular rigidity, occasional random movements of legs |
| 1 – Flexed/Extended  | Tense, straight legs; rigid and/or rapid extension/flexion |
| **State of Arousal**  |  |
| 0 – Sleeping/Awake | Quiet, peaceful, sleeping, or alert random leg movement |
| 1 – Fussy  | Alert, restless, thrashing |
| **TOTAL**  |  |

Rater: \_\_\_\_\_\_\_\_\_\_\_\_**DATA COLLECTION FORM (PHASE 2)**

**BASIC STUDY INFORMATION**

Patient ID: \_\_\_\_\_\_\_\_\_\_\_\_\_

Date and time of study initiation: \_\_\_\_\_\_\_\_\_\_\_\_\_ (YYYY-MM-DD) \_\_\_\_\_\_\_\_\_\_\_\_ (HH:MM)

Date and time of study completion: \_\_\_\_\_\_\_\_\_\_\_\_\_ (YYYY-MM-DD) \_\_\_\_\_\_\_\_\_\_\_\_ (HH:MM)

**DEMOGRAPHICS**

|  |  |  |
| --- | --- | --- |
| Year of birth: \_\_\_\_\_\_\_ | Sex: ☐ Male ☐ Female | Hours of life (at enrollment): \_\_\_\_\_\_\_\_ |
| Gestational age (at birth): \_\_\_\_\_\_ weeks \_\_\_\_\_\_ days | Birth weight: \_\_\_\_\_\_\_\_\_ grams |
| Diagnosis(es) at time of enrollment:  |
| ☐ Perinatal asphyxia ☐ Anemia ☐ Apneas and bradycardias ☐ Bronchopulmonary dysplasia ☐ Hydrocephalus |
| ☐ Intraventricular hemorrhage ☐ Jaundice ☐ Necrotizing enterocolitis ☐ Other, specify: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Treatments at enrollment: |
| ☐ Therapeutic hypothermia | ☐ Continuous positive airway pressure (CPAP) |
| ☐ Conventional mechanical ventilation (CMV) | ☐ High frequency ventilation (HFV) |
| ☐ Nasal intermittent positive pressure ventilation (NIPPV) | ☐ Not applicable/healthy infants |
| Patient group: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H |

|  |
| --- |
| A = healthy term infants in room air at enrollment B = term infants with perinatal asphyxia undergoing therapeutic hypothermia at enrollmentC = healthy preterm infants in room air at enrollment D = preterm infants on continuous positive airway pressure at enrollmentE = preterm infants on conventional mechanical ventilation at enrollmentF = preterm infants on high frequency ventilation at enrollment G = preterm infants on nasal intermittent positive end expiratory pressure at enrollmentH = preterm infants on continuous positive airway pressure at enrollment |

**HOURLY LOGS**

|  |
| --- |
| Start Date: Start Time: End Date: End Time:  |
|  | baseline | 1h | 2h | 3h | 4h | 5h | 6h | 7h | 8h | 9h | 10h | 11h | 12h |
| Location of chest unit(Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of abdominal unit (Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of limb unit(R-right, L-left, H-hand/wrist, F-foot) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Number of conventional wires |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Axillary temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Room temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Air temperature (°C) & humidity (%) - 15cm from neonate |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Kangaroo care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Nursing care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Medications(Write down any medication in use) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Phototherapy(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Type of ventilatory support (CPAP, CMV, HFV, NIPPV) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate location(incubator/crib)  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate position (s-supine, p-prone, side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sensor disconnections (N)/reasons\* |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 13h | 14h | 15h | 16h | 17h | 18h | 19h | 20h | 21h | 22h | 23h | 24h | 25h |
| Location of chest unit(Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of abdominal unit (Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of limb unit(R-right, L-left, H-hand/wrist, F-foot) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Number of conventional wires |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Axillary temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Room temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Air temperature (°C) & humidity (%) - 15cm from neonate |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Kangaroo care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Nursing care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Medications(Write down any medication in use) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Phototherapy(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Type of ventilatory support (CPAP, CMV, HFV, NIPPV) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate location(incubator/crib) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate position (s-supine, p-prone, side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sensor disconnections (N)/reasons\* |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 26h | 27h | 28h | 29h | 30h | 31h | 32h | 33h | 34h | 35h | 36h | 37h | 38h |
| Location of chest unit(Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of abdominal unit (Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of limb unit(R-right, L-left, H-hand/wrist, F-foot) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Number of conventional wires |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Axillary temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Room temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Air temperature (°C) & humidity (%) - 15cm from neonate |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Kangaroo care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Nursing care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Medications(Write down any medication in use) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Phototherapy(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Type of ventilatory support (CPAP, CMV, HFV, NIPPV) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate location(incubator/crib) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate position (s-supine, p-prone, side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sensor disconnections (N)/reasons\* |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 39h | 40h | 41h | 42h | 43h | 44h | 45h | 46h | 47h | 48h | 49h | 50h | 51h |
| Location of chest unit(Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of abdominal unit (Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of limb unit(R-right, L-left, H-hand/wrist, F-foot) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Number of conventional wires |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Axillary temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Room temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Air temperature (°C) & humidity (%) - 15cm from neonate |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Kangaroo care(Y/N)  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Nursing care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Medications(Write down any medication in use) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Phototherapy(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Type of ventilatory support (CPAP, CMV, HFV, NIPPV) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate location(incubator/crib)  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate position (s-supine, p-prone, side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sensor disconnections (N)/reasons\* |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 52h | 53h | 54h | 55h | 56h | 57h | 58h | 59h | 60h | 61h | 62h | 63h | 64h |
| Location of chest unit(Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of abdominal unit (Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of limb unit(R-right, L-left, H-hand/wrist, F-foot) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Number of conventional wires |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Axillary temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Room temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Air temperature (°C) & humidity (%) - 15cm from neonate |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Kangaroo care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Nursing care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Medications(Write down any medication in use) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Phototherapy(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Type of ventilatory support (CPAP, CMV, HFV, NIPPV) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate location(incubator/crib) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate position (s-supine, p-prone, side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sensor disconnections (N)/reasons\* |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 65h | 66h | 67h | 68h | 69h | 70h | 71h | 72h | 73h | 74h | 75h | 76h | 77h |
| Location of chest unit(Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of abdominal unit (Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of limb unit(R-right, L-left, H-hand/wrist, F-foot) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Number of conventional wires |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Axillary temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Room temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Air temperature (°C) & humidity (%) - 15cm from neonate |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Kangaroo care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Nursing care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Medications(Write down any medication in use) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Phototherapy(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Type of ventilatory support (CPAP, CMV, HFV, NIPPV) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate location(incubator/crib) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate position (s-supine, p-prone, side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sensor disconnections (N)/reasons\* |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 78h | 79h | 80h | 81h | 82h | 83h | 84h | 85h | 86h | 87h | 88h | 89h | 90h |
| Location of chest unit(Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of abdominal unit (Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of limb unit(R-right, L-left, H-hand/wrist, F-foot) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Number of conventional wires |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Axillary temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Room temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Air temperature (°C) & humidity (%) - 15cm from neonate |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Kangaroo care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Nursing care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Medications(Write down any medication in use) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Phototherapy(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Type of ventilatory support (CPAP, CMV, HFV, NIPPV) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate location(incubator/crib) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate position (s-supine, p-prone, side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sensor disconnections (N)/reasons\* |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 91h | 92h | 93h | 94h | 95h | 96h |  |  |  |  |  |  |  |
| Location of chest unit(Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of abdominal unit (Center, R or L side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Location of limb unit(R-right, L-left, H-hand/wrist, F-foot) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Number of conventional wires |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Axillary temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Room temperature (°C) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Air temperature (°C) & humidity (%) - 15cm from neonate |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Kangaroo care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Nursing care(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Medications(Write down any medication in use) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Phototherapy(Y/N) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Type of ventilatory support (CPAP, CMV, HFV, NIPPV) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate location(incubator/crib) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Neonate position (s-supine, p-prone, side) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sensor disconnections (N)/reasons\* |  |  |  |  |  |  |  |  |  |  |  |  |  |

\*A = x-ray, B = bath, C = cleaning, D = tests, E = transport, F = other

**PHOTOS OF THE SKIN AT SENSOR PLACEMENT SITES**

(place “✓” if done)

|  |  |
| --- | --- |
|  | **Chest:** |
| ☐ Baseline (0h) | ☐ Sensor replacement #1Date:Time:  | ☐ Sensor replacement #2 Date:Time: | ☐ Sensor replacement #3 Date:Time: | ☐ 96h |
|  | **Abdomen:** |
| ☐ Baseline (0h) | ☐ Sensor replacement #1Date:Time: | ☐ Sensor replacement #2 Date:Time: | ☐ Sensor replacement #3 Date:Time: | ☐ 96h |
|  | **Limb:** |
| ☐ Baseline (0h) | ☐ Sensor replacement #1Date:Time: | ☐ Sensor replacement #2 Date:Time: | ☐ Sensor replacement #3 Date:Time: | ☐ 96h |

**NEONATAL INFANT PAIN SCALE**

Sensor replacement #1 – Time: \_\_\_\_\_\_\_\_\_\_\_\_ Rater: \_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **Pain Assessment**  | Score  |
| **Facial Expression**  |   |
| 0 – Relaxed muscles   | Restful face, neutral expression   |
| 1 – Grimace  | Tight facial muscles, furrowed brow, chin, jaw, (negative facial expression – nose, mouth, brow)  |
| **Cry**  |   |
| 0 – No cry   | Quiet, not crying   |
| 1 - Whimper  | Mild moaning, intermittent  |
| 2 – Vigorous Cry   | Loud scream; rising, shrill, continuous (Note: silent cry may be scored if baby is intubated as evidenced by obvious mouth and facial movement.)  |
| **Breathing Patterns**  |   |
| 0 – Relaxed   | Usual pattern for this infant   |
| 1 – Change in Breathing   | Indrawing, irregular, faster than usual, gagging, breath holding  |
| **Arms**  |   |
| 0 – Relaxed/Restrained  | No muscular rigidity, occasional random movements of arms   |
| 1 – Flexed/Extended   | Tense, straight legs; rigid and/or rapid extension/flexion  |
| **Legs**  |   |
| 0 – Relaxed/Restrained  | No muscular rigidity, occasional random movements of legs  |
| 1 – Flexed/Extended   | Tense, straight legs; rigid and/or rapid extension/flexion  |
| **State of Arousal**  |   |
| 0 – Sleeping/Awake  | Quiet, peaceful, sleeping, or alert random leg movement  |
| 1 – Fussy   | Alert, restless, thrashing  |
| **TOTAL**  |   |

Sensor replacement #2 – Time: \_\_\_\_\_\_\_\_\_\_\_\_Rater: \_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **Pain Assessment**  | Score  |
| **Facial Expression**  |   |
| 0 – Relaxed muscles   | Restful face, neutral expression   |
| 1 – Grimace  | Tight facial muscles, furrowed brow, chin, jaw, (negative facial expression – nose, mouth, brow)  |
| **Cry**  |   |
| 0 – No cry   | Quiet, not crying   |
| 1 - Whimper  | Mild moaning, intermittent  |
| 2 – Vigorous Cry   | Loud scream; rising, shrill, continuous (Note: silent cry may be scored if baby is intubated as evidenced by obvious mouth and facial movement.)  |
| **Breathing Patterns**  |   |
| 0 – Relaxed   | Usual pattern for this infant   |
| 1 – Change in Breathing   | Indrawing, irregular, faster than usual, gagging, breath holding  |
| **Arms**  |   |
| 0 – Relaxed/Restrained  | No muscular rigidity, occasional random movements of arms   |
| 1 – Flexed/Extended   | Tense, straight legs; rigid and/or rapid extension/flexion  |
| **Legs**  |   |
| 0 – Relaxed/Restrained  | No muscular rigidity, occasional random movements of legs  |
| 1 – Flexed/Extended   | Tense, straight legs; rigid and/or rapid extension/flexion  |
| **State of Arousal**  |   |
| 0 – Sleeping/Awake  | Quiet, peaceful, sleeping, or alert random leg movement  |
| 1 – Fussy   | Alert, restless, thrashing  |
| **TOTAL**  |   |

Sensor replacement #3 – Time: \_\_\_\_\_\_\_\_\_\_\_\_ Rater: \_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **Pain Assessment**  | Score  |
| **Facial Expression**  |   |
| 0 – Relaxed muscles   | Restful face, neutral expression   |
| 1 – Grimace  | Tight facial muscles, furrowed brow, chin, jaw, (negative facial expression – nose, mouth, brow)  |
| **Cry**  |   |
| 0 – No cry   | Quiet, not crying   |
| 1 - Whimper  | Mild moaning, intermittent  |
| 2 – Vigorous Cry   | Loud scream; rising, shrill, continuous (Note: silent cry may be scored if baby is intubated as evidenced by obvious mouth and facial movement.)  |
| **Breathing Patterns**  |   |
| 0 – Relaxed   | Usual pattern for this infant   |
| 1 – Change in Breathing   | Indrawing, irregular, faster than usual, gagging, breath holding  |
| **Arms**  |   |
| 0 – Relaxed/Restrained  | No muscular rigidity, occasional random movements of arms   |
| 1 – Flexed/Extended   | Tense, straight legs; rigid and/or rapid extension/flexion  |
| **Legs**  |   |
| 0 – Relaxed/Restrained  | No muscular rigidity, occasional random movements of legs  |
| 1 – Flexed/Extended   | Tense, straight legs; rigid and/or rapid extension/flexion  |
| **State of Arousal**  |   |
| 0 – Sleeping/Awake  | Quiet, peaceful, sleeping, or alert random leg movement  |
| 1 – Fussy   | Alert, restless, thrashing  |
| **TOTAL**  |   |

Final sensor removal (96h) – Time: \_\_\_\_\_\_\_\_\_\_\_\_ Rater: \_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **Pain Assessment**  | Score  |
| **Facial Expression**  |   |
| 0 – Relaxed muscles   | Restful face, neutral expression   |
| 1 – Grimace  | Tight facial muscles, furrowed brow, chin, jaw, (negative facial expression – nose, mouth, brow)  |
| **Cry**  |   |
| 0 – No cry   | Quiet, not crying   |
| 1 - Whimper  | Mild moaning, intermittent  |
| 2 – Vigorous Cry   | Loud scream; rising, shrill, continuous (Note: silent cry may be scored if baby is intubated as evidenced by obvious mouth and facial movement.)  |
| **Breathing Patterns**  |   |
| 0 – Relaxed   | Usual pattern for this infant   |
| 1 – Change in Breathing   | Indrawing, irregular, faster than usual, gagging, breath holding  |
| **Arms**  |   |
| 0 – Relaxed/Restrained  | No muscular rigidity, occasional random movements of arms   |
| 1 – Flexed/Extended   | Tense, straight legs; rigid and/or rapid extension/flexion  |
| **Legs**  |   |
| 0 – Relaxed/Restrained  | No muscular rigidity, occasional random movements of legs  |
| 1 – Flexed/Extended   | Tense, straight legs; rigid and/or rapid extension/flexion  |
| **State of Arousal**  |   |
| 0 – Sleeping/Awake  | Quiet, peaceful, sleeping, or alert random leg movement  |
| 1 – Fussy   | Alert, restless, thrashing  |
| **TOTAL**  |   |

**RESPIRATION MEASUREMENTS USING UNCALIBRATED RIP BELTS**

**Day 1**: From \_\_\_\_\_\_\_\_\_\_\_\_ (HH:MM) to \_\_\_\_\_\_\_\_\_\_\_\_ (HH:MM)

**Day 2**: From \_\_\_\_\_\_\_\_\_\_\_\_ (HH:MM) to \_\_\_\_\_\_\_\_\_\_\_\_ (HH:MM)

**Day 3**: From \_\_\_\_\_\_\_\_\_\_\_\_ (HH:MM) to \_\_\_\_\_\_\_\_\_\_\_\_ (HH:MM)

**Day 4**: From \_\_\_\_\_\_\_\_\_\_\_\_ (HH:MM) to \_\_\_\_\_\_\_\_\_\_\_\_ (HH:MM)

**ADVERSE EVENTS**

☐ Skin irritation/redness

If observed, complete section below:

|  |  |
| --- | --- |
| Onset date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (YYYY-MM-DD) | Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Severity: ☐ Mild ☐ Moderate ☐ Severe | Treatment required? ☐ Yes ☐ No |
| Relationship to study sensors: ☐ Related ☐ Suspected ☐ Not suspected |
| Outcome: ☐ Recovered ☐ Improving ☐ Unchanged ☐ End of study participation |

☐ Skin erosions

If observed, complete section below:

|  |  |
| --- | --- |
| Onset date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (YYYY-MM-DD) | Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Severity: ☐ Mild ☐ Moderate ☐ Severe | Treatment required? ☐ Yes ☐ No |
| Relationship to study sensors: ☐ Related ☐ Suspected ☐ Not suspected |
| Outcome: ☐ Recovered ☐ Improving ☐ Unchanged ☐ End of study participation |

☐ Skin bleeding

If observed, complete section below:

|  |  |
| --- | --- |
| Onset date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (YYYY-MM-DD) | Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Severity: ☐ Mild ☐ Moderate ☐ Severe | Treatment required? ☐ Yes ☐ No |
| Relationship to study sensors: ☐ Related ☐ Suspected ☐ Not suspected |
| Outcome: ☐ Recovered ☐ Improving ☐ Unchanged ☐ End of study participation |

☐ Other, specify: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ADVERSE EVENTS**

☐ Skin irritation/redness

If observed, complete section below:

|  |  |
| --- | --- |
| Onset date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (YYYY-MM-DD) | Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Severity: ☐ Mild ☐ Moderate ☐ Severe | Treatment required? ☐ Yes ☐ No |
| Relationship to study sensors: ☐ Related ☐ Suspected ☐ Not suspected |
| Outcome: ☐ Recovered ☐ Improving ☐ Unchanged ☐ End of study participation |

☐ Skin erosions

If observed, complete section below:

|  |  |
| --- | --- |
| Onset date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (YYYY-MM-DD) | Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Severity: ☐ Mild ☐ Moderate ☐ Severe | Treatment required? ☐ Yes ☐ No |
| Relationship to study sensors: ☐ Related ☐ Suspected ☐ Not suspected |
| Outcome: ☐ Recovered ☐ Improving ☐ Unchanged ☐ End of study participation |

☐ Skin bleeding

If observed, complete section below:

|  |  |
| --- | --- |
| Onset date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (YYYY-MM-DD) | Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Severity: ☐ Mild ☐ Moderate ☐ Severe | Treatment required? ☐ Yes ☐ No |
| Relationship to study sensors: ☐ Related ☐ Suspected ☐ Not suspected |
| Outcome: ☐ Recovered ☐ Improving ☐ Unchanged ☐ End of study participation |

☐ Other, specify: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_