

Ins and Outs Audit

I. Background

Significant changes to care present some of the most challenging events for infants, families and care teams. These “critical transitions” are myriad, including changes in an infant’s site of care, significant change in their status or plan of care, or a change in the infant’s care team. These transitions occur within a hospital or health system and between several hospitals and communities.

Transitions are vulnerable periods, and if not well planned and orchestrated, may result in harm. Transitions contribute to an increased length of stay, separation from families, inefficient use of resources and suboptimal care.

Vermont Oxford Network is conducting the quality improvement series iNICQ 2019: The Ins and Outs of Neonatal Care. Improving Critical Transitions and Clinical Outcomes for Every Newborn. This internet-based quality collaborative is a multicenter collaborative focused on improving physical and clinical transitions of care. These transitions will include physical transitions such as admission from the delivery room, transfer from an outlying facility and within facility transitions, such as moving from the NICU to diagnostic areas (such as MRI) or operating facilities. Clinical transitions will also be evaluated, such as the initiation of antibiotics or pharmacological therapy for neonatal abstinence syndrome. Every team will also work on improving the fidelity and safety of patient hand-offs.

In conjunction with this educational program, Vermont Oxford Network will conduct quality improvement audits to address these issues of care. The audit includes an assessment of specific policies and guidelines regarding both physical and clinical transitions of infants in your unit, including transport from outlying hospital facilities, delivery room care, transfer for imaging or MRI, transfer for surgical procedures, early planning of transfer home, transfer home of medically complicated newborn infants, as well as clinical transitions of antibiotic initiation, treatment for neonatal abstinence syndrome and extubation. Infants experiencing these transitions will be audited on a single day in the audit window. These audits will augment or supplement local data collection measures for the teams.

The specific data elements for the audit and information regarding conduct of the audit are included in these materials.

II. Goals

1. To provide participating sites with measures that can be applied locally to their chosen transitions based on the framework provided.
2. To test for improvement in the collaborative as a whole.

III. Methods

Vermont Oxford Network will provide data collection forms and will operate a website that will allow for transfer of this data without identification of individual participants. There are several steps that your center must do in to participate.

1. Assign an audit coordinator/data collector. The audit coordinator/data collector will oversee the audit process regarding communication with the institutional review board and Vermont Oxford Network. The audit coordinator may or may not be the individual who will conduct the audit. If the coordinator is not the person who will conduct the audit, also assign a separate “data collector”.

2. Address any local Human Subjects Research concerns.

The audit does not involve any specific interventions, nor does it involve direct physical contact with any individual or patient; however, the local data collector will need to review unit logs, review patient paper charts and/or electronic medical records and approach the infant’s bedside to determine eligibility and review specific chart orders, management plans and laboratory values. However, no identifying data (such as medical record number or other identifiers) will be submitted to Vermont Oxford Network.

No aspect of the infant’s care will be directly affected by the auditing process and no individually identifiable data or protected health care information will be transmitted to VON; further the website will not accept any data of this nature.

A comprehensive report of your center’s performance compared to the aggregate results of all VON centers (de-identified by site) will be shared with you and discussed extensively in follow up web seminars.

In the future the results may be submitted for publication in peer-reviewed literature. In each step of these efforts, no specific data regarding the center or the individuals will be identifiable. In addition to the VON Day Audits, our local team may elect to perform serial quality improvement audits to measure improvements in care over time.

The iNICQ Collaborative and the VON Day Audit have been reviewed by The University of Vermont Institutional Review Board, utilizing a self-determination tool. It has been identified that this work does not require IRB review because it does not meet the definition of a “research” activity under the regulatory definition according to 45 CFR 46.102(d).

However, this determination solely addresses the role of Vermont Oxford Network in sponsoring and supporting the iNICQ Collaboratives and the VON Day Audit. The approval from The University of Vermont Committee on Human Research does not cover any activities conducted by institutions or staff participating in VON Day Audits or iNICQ Collaboratives.

Each site participating in the VON Days audits and/or the iNICQ Collaborative will need to discuss the protocol with your local Institutional Review Board (IRB) to determine whether any necessary human subject reviews and approvals are needed. We have included a sample IRB letter with this mailing.

3. Conduct the audit.

Vermont Oxford Network has chosen 2 weeks in February 2019 during which the “The Ins and Outs of Neonatal Care. Improving Critical Transitions and Clinical Outcomes for Every Newborn” audit will occur (currently scheduled for February 11 through February 22, 2019) with the follow-up audit scheduled for 2 weeks in November (November 4 through November 15, 2019). You will pick a day during those 2 weeks that the audit will occur at your center. We anticipate that the audit will take no more than 4 to 6 hours on the chosen day.

You must choose which units you will audit. The audit was designed with a typical Neonatal Intensive Care Unit (NICU) or Neonatal Step-down Unit in mind. You may choose one or both units and plan on re-auditing the same unit in the follow up audit in November. Some centers may find the number of patients audited onerous. Although not recommended, you may choose a subpopulation in a unit (very low birth weight babies) and only audit those infants or curtail the audit at a fixed number of infants (for example, 40 infants). However, you must audit all eligible transitions the infant experienced.

- **Eligibility:** On the selected day, assess the eligible infants in your unit. All infants receiving care in your NICU or step-down unit are eligible regardless of gestational or chronological age. Included Transitions will depend on the age and clinical status of the infant being audited. This includes a heterogeneous group of infants including:

- Infants less than or equal to 7 days of age (will be audited regarding care during transfer to your facility or delivery room care for inborn infants at your facility).
- Infants greater than 7 days of age at time of the audit (will be audited regarding general discharge planning and assessment of family needs)
- Infants of any age having diagnostic tests or procedures outside of the NICU or surgery outside of the NICU within 7 days prior to the audit.

- Infants with critical changes in clinical status including initiation of antibiotics, extubation, initiation of pharmacological therapy for neonatal abstinence syndrome within 7 days prior to the audit.

- Infants requiring discharge planning within 7 days prior to the audit

ALL infants will be audited regarding the fidelity and safety of patient hand-offs.

- **Data Collection and Analysis:** Data will be collected regarding the guidelines and policies regarding critical transitions in place at individual units (Unit Data Form, Appendix 1) and evaluation of the practices regarding critical transitions in individual patients (Individual Patient Data Form, Appendix 2). Data will come both from chart review and interview with caregivers at the bedside.

Paper forms are provided, but you are encouraged to complete the Patient Data Forms electronically. The Qualtrics program is compatible with your computer, laptop, iPad or phone. Please follow local policy, procedures and protocols whenever collecting data at the patient bedside; your hospital may have restrictions on using personal devices (i.e. your phone) for data collection activities.

Centers will receive feedback regarding their own practice and compliance with their own guidelines. Information regarding the aggregate group's policies and procedures will be presented at the upcoming iNICQ sessions.

The aggregate results will be published in the peer reviewed medical or quality literature. In all of these efforts, no specific data regarding the center or the individuals will be shared. We are recommending that centers re-audit their efforts before the final session of the iNICQ Collaborative in order to chart any progress regarding establishment of guidelines and compliance with guidelines.

UNIT BASED QUESTIONS

1. General unit policies and procedures:

- a. Does your center have written policies or guidelines regarding which patients are eligible for admission to your Neonatal Intensive Care Unit or other special care units? [Metric: Standardization]

Select "Yes" if your NICU [or chosen unit] has written policies or guidelines regarding which patients are eligible for admission to your Neonatal Intensive Care Unit or other special care units.

Select "No" if your NICU [or chosen unit] does not have written policies or guidelines regarding which patients are eligible for admission to your Neonatal Intensive Care Unit or other special care units.

- b. In shift to shift handoffs, does your staff routinely use structured communication tools [such as **SBAR** (Situation, Background, Assessment, Recommendation) or **I-PASS** (Illness severity, Patient summary, Action list, Situation awareness or contingency planning, Synthesis by receiver)]? [Metric: Communication]

*Select “Yes” if your NICU staff [or chosen unit] routinely use structured communication tools [such as **SBAR** (Situation, Background, Assessment, Recommendation) or **I-PASS** (Illness severity, Patient summary, Action list, Situation awareness or contingency planning, Synthesis by receiver)] in shift to shift handoffs?*

*Select “No” if your NICU staff [or chosen unit] does not routinely use structured communication tools [such as **SBAR** (Situation, Background, Assessment, Recommendation) or **I-PASS** (Illness severity, Patient summary, Action list, Situation awareness or contingency planning, Synthesis by receiver)] in shift to shift handoffs?*

- c. Does your hospital or NICU provide teamwork training (such as the AHRQ TeamStepps) that is available to all staff? [Metric: Teamwork]

Select “Yes” if your hospital or NICU provides teamwork training (such as the AHRQ TeamStepps) that is available to all staff.

Select “No” if your hospital or NICU does not provide teamwork training (such as the AHRQ TeamStepps) that is available to all staff.

- d. Does the NICU team routinely conduct a formal evaluation or debriefing when transitions do not go as planned? [Metric: Standardization]

Select “Yes” if your NICU team routinely conducts a formal evaluation or debriefing when transitions do not go as planned.

Select “No” if your NICU team does not routinely conduct a formal evaluation or debriefing when transitions do not go as planned.

- e. Does the NICU team formally screen families for critical social determinates of health (including food insecurity, transportation needs, living situation) on admission and throughout the NICU stay? [Metric: Standardization]

Select “Yes” if your NICU team formally screens families for critical social determinates of health (including food insecurity, transportation needs, living situation) on admission and throughout the NICU stay.

Select “No” if your NICU team does not formally screen families for critical social determinates of health (including food insecurity, transportation needs, living situation) on admission and throughout the NICU stay.

- f. Are parents involved when creating policies or practices related to transitions of care? [Metric: Family Integrated]

Select "Yes" if parents are involved when creating policies or practices related to transitions of care.

Select "No" if parents are not involved when creating policies or practices related to transitions of care.

Physical transitions

2. Transport from outside hospital:

- a. Does your center accept infants transferred from outside hospitals?

Select "Yes" if your center accepts infants transferred from outside hospitals.

Select "No" if your center does not accept infants transferred from outside hospitals

If "No", please skip to question 3.

- b. Does your center have a dedicated team for neonatal transport that has expertise in the care of critically ill newborns? [Metric: Teamwork]

Select "Yes" if your center has a dedicated team for neonatal transport that has expertise in the care of critically ill newborns.

Select "No" if your center does not have a dedicated team for neonatal transport that has expertise in the care of critically ill newborns.

- c. Does your transport service have a system in place to ensure immediate availability of medical advice for caregivers at the referring hospital? [Metric: Communication]

Select "Yes" if your transport service has a system in place to ensure immediate availability of medical advice for caregivers at the referring hospital.

Select "No" if transport service does not have a system in place to ensure immediate availability of medical advice for caregivers at the referring hospital.

- d. Does your transport service have a system in place to ensure rapid dispatch of a transport team for critically ill neonates at referring hospital? [Metric: Communication]

Select “Yes” if your transport service has a system in place to ensure rapid dispatch of a transport team for critically ill neonates at referring hospital.

Select “No” if transport service does not have a system in place to ensure rapid dispatch of a transport team for critically ill neonates at referring hospital.

- e. Does your transport team use telemedicine to communicate with referring caregivers? [Metric: Communication]

Select “Yes” if your transport service uses telemedicine to communicate with referring caregivers.

Select “No” if transport service does not use telemedicine to communicate with referring caregivers.

- f. Does your transport team use telemedicine to communicate with the families of infants referred to your center for care? [Metric: Communication]

Select “Yes” if your transport service uses telemedicine to communicate with the families of infants referred to your center for care.

Select “No” if transport service does not use telemedicine to communicate with the families of infants referred to your center for care.

- g. Does the team (or specific members of the team) have specific training regarding critical procedural skills including:

- g1. Specific training regarding airway management including endotracheal intubation

Select “Yes” if your team (or specific members of the team) has specific training regarding airway management (including endotracheal intubation).

Select “No” if your team (or specific members of the team) does not have specific training regarding airway management (including endotracheal intubation).

- g2. Specific training regarding vascular access

Select “Yes” if your team (or specific members of the team) has specific training regarding placement of vascular access (including placement of peripheral intravenous lines and umbilical venous lines).

Select “No” if your team (or specific members of the team) does not have specific training regarding placement of vascular access (including placement of peripheral intravenous lines and umbilical venous lines).

g3. Specific training regarding thoracostomy

Select "Yes" if your team (or specific members of the team) has specific training regarding thoracostomy tube placement for pneumothorax.

Select "No" if your team (or specific members of the team) does not have specific training regarding thoracostomy tube placement for pneumothorax.

[Metric: Standardization]

- h. Does your center hold refresher skill courses and perform ongoing clinical assessment to help to ensure maintenance of competency? [Metric: Standardization]

Select "Yes" if your center holds refresher skill courses and perform ongoing clinical assessment to help to ensure maintenance of competency.

Select "No" if your center does not hold refresher skill courses and perform ongoing clinical assessment to help to ensure maintenance of competency.

- i. Is there a transport database which can be used for benchmarking, quality improvement and research? [Metric: Standardization]

Select "Yes" if your center has a transport database which can be used for benchmarking, quality improvement and research.

Select "No" if your center does not have a transport database which can be used for benchmarking, quality improvement and research.

- j. Does your center have policies and procedures in place to assure communication with families regarding the status of the infant at transfer? [Metric: Family Integrated]

Select "Yes" if your center has policies and procedures in place to assure communication with families regarding the status of the infant at transfer.

Select "No" if your center does not have policies and procedures in place to assure communication with families regarding the status of the infant at transfer.

- k. Does your center have policies and procedures in place to assure communication with families regarding the status of the infant on admission to the receiving center? [Metric: Family Integrated]

Select “Yes” if your center has policies and procedures in place to assure communication with families regarding the status of the infant on admission to the receiving center.

Select “No” if your center does not have policies and procedures in place to assure communication with families regarding the status of the infant on admission to the receiving center.

- l. Does your center have policies and procedures in place to inform the referring physicians and caregiving team regarding the status of the infant on admission? [Metric: Family Integrated]

Select “Yes” if your center has policies and procedures in place to inform the referring physicians and caregiving team regarding the status of the infant on admission to the receiving center.

Select “No” if your center does not have policies and procedures in place to inform the referring physicians and caregiving team regarding the status of the infant on admission to the receiving center.

- m. Does your transport team routinely perform a formal debriefing of each transport? [Metric: Communication]

Select “Yes” if your transport team routinely perform a formal debriefing of each transport?

Select “No” if your transport team does not routinely perform a formal debriefing of each transport?

3. Delivery room care:

- a. Does your center have a delivery service?

Select “Yes” if your center has a delivery service.

Select “No” if your center does not have a delivery service.

If “No”, please skip to question 4.

- b. Does your center have written policies or guidelines regarding which deliveries require attendance by a designated resuscitation team? [Metric: Standardization]

Select “Yes” if your center has policies and procedures regarding which deliveries require attendance by a designated resuscitation team.

Select “No” if your center does not have policies and procedures regarding which deliveries require attendance by a designated resuscitation team.

- c. Does your center have written policies or guidelines regarding what personnel should be present at the deliveries of newborn infants? [Metric: Standardization]

Select “Yes” if your center has policies and procedures regarding what personnel should be present at the deliveries of newborn infants.

Select “No” if your center does not have policies and procedures regarding what personnel should be present at the deliveries of newborn infants.

- d. Does your center have written policies or guidelines regarding the training required for personnel before they can attend deliveries of newborn infants? [Metric: Standardization]

Select “Yes” if your center has policies and procedures regarding the training required for personnel before they can attend deliveries of newborn infants.

Select “No” if your center does not have policies and procedures regarding the training required for personnel before they can attend deliveries of newborn infants.

- e. Does your center have a program in place for simulation-based neonatal resuscitation training? [Metric: Teamwork, Standardization]

Select “Yes” if your center has a program in place for simulation-based neonatal resuscitation training.

Select “No” if your center does not have a program in place for simulation-based neonatal resuscitation training.

- f. Does your center have written policies or guidelines regarding the performance of briefings by the resuscitation team prior to deliveries? [Metric: Teamwork, Standardization]

Select “Yes” if your center has written policies or guidelines regarding the performance of briefings by the resuscitation team prior to deliveries.

Select “No” if your center does not have written policies or guidelines regarding the performance of briefings by the resuscitation team prior to deliveries.

- g. Does your delivery room team routinely use structured communication tools such as **SBAR** (**S**ituation, **B**ackground, **A**ssessment, **R**ecommendation) for briefing prior to deliveries? [Metric: Communication]

*Select “Yes” if your delivery room team routinely uses structured communication tools such as **SBAR** (**S**ituation, **B**ackground, **A**ssessment, **R**ecommendation) for briefing prior to deliveries.*

*Select “No” if your delivery room team does not routinely use structured communication tools such as **SBAR** (Situation, Background, Assessment, Recommendation) for briefing prior to deliveries.*

- h. Does your delivery room team routinely use an equipment checklist to ensure the quality and safety of deliveries? [Metric: Teamwork]

Select “Yes” if your delivery room team routinely uses an equipment checklist to ensure the quality and safety of deliveries.

Select “No” if your delivery room team does not routinely use an equipment checklist to ensure the quality and safety of deliveries.

- i. Does your center have written policies and procedures in place for communication with caregivers immediately after each delivery? [Metric: Communication]

Select “Yes” if your center has written policies and procedures in place for communication with caregivers immediately after each delivery.

Select “No” if your center does not have written policies and procedures in place for communication with caregivers immediately after each delivery.

- j. Does your center have written policies or guidelines regarding communication with families immediately after the delivery? [Metric: Family Integrated]

Select “Yes” if your center has written policies or guidelines regarding communication with families immediately after the delivery.

Select “No” if your center does not have written policies or guidelines regarding communication with families immediately after the delivery.

- k. Does your delivery room team routinely perform a formal debriefing of each delivery? [Metric: Communication]

Select “Yes” if your delivery room team routinely performs a formal debriefing of each delivery.

Select “No” if your delivery room team does not routinely perform a formal debriefing of each delivery.

4. In hospital transfer for MRI:

- a. Does your center have facilities to perform MRI on infants?

*Select “Yes” if your center has facilities to perform MRI studies on infants.
Select “No” if your center does not have facilities to perform MRI studies on infants.*

If “No”, please skip to question 5.

- b. Does your center have written policies or guidelines regarding what personnel should participate in the transport of infants to the MRI facility? [Metric: Standardization]

Select "Yes" if your center has written policies or guidelines regarding what personnel should participate in the transport of infants to the MRI facility.

Select "No" if your center does not have written policies or guidelines regarding what personnel should participate in the transport of infants to the MRI facility.

- c. Does your center have written policies or guidelines regarding the training required for personnel before they can participate in the transport of infants to the MRI facility? [Metric: Teamwork]

Select "Yes" if your center has written policies or guidelines regarding the training required for personnel before they can participate in the transport of infants to the MRI facility.

Select "No" if your center does not have written policies or guidelines regarding the training required for personnel before they can participate in the transport of infants to the MRI facility.

- d. Does your center use a checklist to ensure that all necessary preparations for the transfer to the MRI facility are carried out? [Metric: Standardization]

Select "Yes" if your center uses a checklist to ensure that all necessary preparations for the transfer to the MRI facility are carried out.

Select "No" if your center does not use a checklist to ensure that all necessary preparations for the transfer to the MRI facility are carried out.

- e. Does your center have written policies or guidelines requiring a time-out procedure to ensure the preparation for transport to the MRI facility is carried out correctly? [Metric: Communication]

Select "Yes" if your center has written policies or guidelines requiring a time-out procedure to ensure the preparation for transport to the MRI facility is carried out correctly.

Select "No" if your center does not have written policies or guidelines requiring a time-out procedure to ensure the preparation for transport to the MRI facility is carried out correctly.

- f. Does your center have written policies or guidelines regarding adequate monitoring of infants transported to the MRI facility? [Metric: Standardization]

Select “Yes” if your center has written policies or guidelines regarding adequate monitoring of infants transported to the MRI facility.

Select “No” if your center does not have written policies or guidelines regarding adequate monitoring of infants transported to the MRI facility.

- g. Does your center have written policies or guidelines regarding communication with families immediately after transport to the MRI facility? [Metric: Family Integrated]

Select “Yes” if your center has written policies or guidelines regarding communication with families immediately after transport to the MRI facility.

Select “No” if your center does not have written policies or guidelines regarding communication with families immediately after transport to the MRI facility.

5. In hospital transfer for surgical procedures:

- a. Does your center have facilities to perform surgery on infants?

Select “Yes” if your center has facilities to perform surgery on infants.

Select “No” if your center does not have facilities to perform surgery on infants.

If “No”, please skip to question 6.

- b. Does your center have written policies or guidelines regarding what personnel should participate in the transport of infants to the operating room? [Metric: Standardization]

Select “Yes” if your center has written policies or guidelines regarding what personnel should participate in the transport of infants to the operating room.

Select “No” if your center does not have written policies or guidelines regarding what personnel should participate in the transport of infants to the operating room.

- c. Does your center have written policies or guidelines regarding the training required for personnel before they can participate in the transport of infants to the operating room? [Metric: Teamwork]

Select “Yes” if your center has written policies or guidelines regarding the training required for personnel before they can participate in the transport of infants to the operating room.

Select “No” if your center does not have written policies or guidelines regarding the training required for personnel before they can participate in the transport of infants to the operating room.

- d. Does your center use a checklist to ensure that all necessary preparations for the transfer to the operating room are carried out? [Metric: Standardization]

Select “Yes” if your center uses a checklist to ensure that all necessary preparations for the transfer to the operating room are carried out.

Select “No” if your center does not use a checklist to ensure that all necessary preparations for the transfer to the operating room are carried out.

- e. Does your center have written policies or guidelines requiring a time-out procedure to ensure the preparation for transport to the operating room is carried out correctly? [Metric: Communication]

Select “Yes” if your center has written policies or guidelines requiring a time-out procedure to ensure the preparation for transport to the operating room is carried out correctly.

Select “No” if your center does not have written policies or guidelines requiring a time-out procedure to ensure the preparation for transport to the operating room is carried out correctly.

- f. Does your center have written policies or guidelines regarding adequate monitoring of infants transported to the operating room? [Metric: Standardization]

Select “Yes” if your center has written policies or guidelines regarding adequate monitoring of infants transported to the operating room.

Select “No” if your center does not have written policies or guidelines regarding adequate monitoring of infants transported to the operating room.

- g. Does your center have written policies or guidelines regarding communication with families immediately after transport to the operating room? [Metric: Family Integrated]

Select “Yes” if your center has written policies or guidelines regarding communication with families immediately after transport to the operating room.

Select “No” if your center does not have written policies or guidelines regarding communication with families immediately after transport to the operating room.

- h. Does your center have mechanisms to provide ongoing status updates while the infant is in the operating room? [Metric: Family Integrated]

Select "Yes" if your center has mechanisms to provide ongoing status updates while the infant is in the operating room.

Select "No" if your center does not have mechanisms to provide ongoing status updates while the infant is in the operating room.

6. Planning transition to home

- a. Does your center have a formal process to engage families in planning transition to home? [Family Integrated]

Select "Yes" if your center has a formal process to engage families in planning transition to home.

Select "No" if your center does not have a formal process to engage families in planning transition to home.

- b. Does the center have formal guidelines regarding medical stability and clinical status of newborn infants regarding:

b1. Adequacy of weight gain

Select "Yes" if your center has formal guidelines regarding adequacy of weight gain prior to discharge.

Select "No" if your center does not have formal guidelines regarding adequacy of weight gain prior to discharge.

b2. Adequacy of thermal control

Select "Yes" if your center has formal guidelines regarding adequacy of thermal control prior to discharge.

Select "No" if your center does not have formal guidelines regarding adequacy of thermal control prior to discharge.

b3. Adequacy of respiratory control

Select "Yes" if your center has formal guidelines regarding adequacy of respiratory control prior to discharge.

Select "No" if your center does not have formal guidelines regarding adequacy of respiratory control prior to discharge.

b4. Adequacy of feeding prior to discharge

Select "Yes" if your center has formal guidelines regarding adequacy of feeding prior to discharge.

Select "No" if your center does not have formal guidelines regarding adequacy of feeding prior to discharge.

[Metric: Standardization]

- c. Prior to discharge, does your NICU team have a formal process to determine follow-up care needs, including identifying appropriate providers and exchanging appropriate information, identification of a primary care physician, referral for surgical specialty or pediatric medical specialty care as needed and neurodevelopmental follow-up? [Metric: Communication]

Select "Yes" if, prior to discharge, your NICU team has a formal process to determine follow-up care needs, including identifying appropriate providers and exchanging appropriate information, identification of a primary care physician, referral for surgical specialty or pediatric medical specialty care as needed and neurodevelopmental follow-up.

Select "No" if, prior to discharge, your NICU team does not have a formal process to determine follow-up care needs, including identifying appropriate providers and exchanging appropriate information, identification of a primary care physician, referral for surgical specialty or pediatric medical specialty care as needed and neurodevelopmental follow-up.

- d. Prior to discharge, does your center perform a formal or informal psychosocial assessment of parenting strengths and risks? [Family Integrated]

Select "Yes" if your center performs a formal or informal psychosocial assessment of parenting strengths and risks prior to discharge.

Select "No" if your center does not perform a formal or informal psychosocial assessment of parenting strengths and risks prior to discharge.

- e. Does your center review the adequacy of financial resources of the family and refer qualified families for financial support including WIC, SSI and Medicaid? [Metric: Family Integrated]

Select "Yes" if your center reviews the adequacy of financial resources of the family and refer qualified families for financial support including WIC, SSI and Medicaid.

Select "No" if your center does not review the adequacy of financial resources of the family and refer qualified families for financial support including WIC, SSI and Medicaid.

- f. Prior to discharge of medically complex infants, does your center assess the adequacy and safety of the home environment? [Family Integrated]

Select “Yes” if your center assesses the adequacy and safety of the home environment prior to discharge of medically complex infants.

Select “No” if your center does not assess the adequacy and safety of the home environment prior to discharge of medically complex infants.

- g. Prior to discharge of medically complex infants, does your center create an emergency intervention plan and identify and notify emergency medical service providers? [Metric: Communication]

Select “Yes” if your center creates an emergency intervention plan and identifies and notifies emergency medical service providers prior to discharge of medically complex infants.

Select “No” if your center does not create an emergency intervention plan and identifies and notifies emergency medical service providers prior to discharge of medically complex infants.

- h. Prior to discharge of medically complex infants, does your center arrange home nursing visits for assessment and parent support? [Metric: Communication]

Select “Yes” if your center arranges home nursing visits for assessment and parent support prior to discharge of medically complex infants.

Select “No” if your center does not arrange home nursing visits for assessment and parent support prior to discharge of medically complex infants.

- i. Prior to discharge of medically complex infants, does your center communicate the discharge plan to the home health agency? [Metric: Family Integrated]

Select “Yes” if your center communicates the discharge plan to the home health agency prior to discharge of medically complex infants.

Select “No” if your center does not communicate the discharge plan to the home health agency prior to discharge of medically complex infants.

- j. In preparation for homecare for the technology dependent infant, does your center assess the availability of 24-hour telephone access, electricity, safe in-house water supply and adequate heating? [Metric: Family Integrated]

Select “Yes” if your center assesses the availability of 24-hour telephone access, electricity, safe in-house water supply and adequate heating in preparation for discharge of a technology dependent infant.

Select “No” if your center does not assess the availability of 24-hour telephone access, electricity, safe in-house water supply and adequate heating in preparation for discharge of a technology dependent infant.

- k. For breastfeeding mothers, does your center provide information on breastfeeding support and availability of lactation counselors? [Metric: Family Integrated]

Select "Yes" if your center provides information on breastfeeding support and availability of lactation counselors for breastfeeding mothers.

Select "No" if your center does not provide information on breastfeeding support and availability of lactation counselors for breastfeeding mothers.

Clinical transitions

7. Antibiotic utilization

- a. Does your NICU have a policy that requires prescribers to document in the medical record or during order entry the dose, duration, and indication for all antibiotic prescriptions? [Metric: Communication]

Select "Yes" if your NICU has a policy that requires prescribers to document in the medical record or during order entry the dose, duration, and indication for all antibiotic prescriptions.

Select "No" if your NICU does not have a policy that requires prescribers to document in the medical record or during order entry the dose, duration, and indication for all antibiotic prescriptions.

- b. Is there a formal procedure or process prompting the NICU care team to review the appropriateness of all antibiotics prescribed for infants in the NICU 48 hours after the initial order (e.g. "antibiotic time out")? [Metric: Standardization]

Select "Yes" if your NICU has a formal procedure or process prompting the NICU care team to review the appropriateness of all antibiotics prescribed for infants in the NICU 48 hours after the initial order (e.g. "antibiotic time out").

Select "No" if your NICU does not have a formal procedure or process prompting the NICU care team to review the appropriateness of all antibiotics prescribed for infants in the NICU 48 hours after the initial order (e.g. "antibiotic time out").

- c. Does your center have written policies or guidelines regarding communication with families regarding initiation or discontinuation of antibiotic therapy? [Metric: Family Integrated]

Select "Yes" if your center has written policies or guidelines regarding communication with families regarding initiation or discontinuation of antibiotic therapy.

Select “No” if your center does not have written policies or guidelines regarding communication with families regarding initiation or discontinuation of antibiotic therapy.

8. Respiratory management/extubation

- a. Does your center have written policies or guidelines outlining the indications for intubation? [Metric: Standardization]

Select “Yes” if your center has written policies or guidelines outlining the indications for intubation.

Select “No” if your center does not have written policies or guidelines outlining the indications for intubation.

- b. Does your center have written policies or guidelines outlining the indications for extubation of ventilated infants? [Metric: Standardization]

Select “Yes” if your center has written policies or guidelines outlining the indications for extubation of ventilated infants.

Select “No” if your center does not have written policies or guidelines outlining the indications for extubation of ventilated infants.

- c. Does your NICU team make daily assessments to help determine eligibility for extubation? [Metric: Communication]

Select “Yes” if your NICU team makes daily assessments to help determine eligibility for extubation.

Select “No” if your NICU team does not make daily assessments to help determine eligibility for extubation.

- d. Does your center have written policies or guidelines regarding communication with families regarding major changes in respiratory status including need for intubation and planned extubation? [Metric: Family Integrated]

Select “Yes” if your center has written policies or guidelines regarding communication with families regarding major changes in respiratory status including need for intubation and planned extubation.

Select “No” if your center does not have written policies or guidelines regarding communication with families regarding major changes in respiratory status including need for intubation and planned extubation.

9. Initiation of pharmacological therapy for infants with neonatal abstinence syndrome (NAS)

- a. Does your center have written policies or guidelines outlining the indications for initiating pharmacological treatment for neonatal abstinence syndrome (NAS)? [Metric: Standardization]

Select “Yes” if your center has written policies or guidelines outlining the indications for initiating pharmacological treatment for neonatal abstinence syndrome (NAS).

Select “No” if your center does not have written policies or guidelines outlining the indications for initiating pharmacological treatment for neonatal abstinence syndrome (NAS).

- b. Does your center have written policies or guidelines outlining the agent and dose for pharmacological treatment for neonatal abstinence syndrome (NAS)? [Metric: Standardization]

Select “Yes” if your center has written policies or guidelines outlining the agent and dose for pharmacological treatment for neonatal abstinence syndrome (NAS).

Select “No” if your center does not have written policies or guidelines outlining the agent and dose for pharmacological treatment for neonatal abstinence syndrome (NAS).

- c. Does your center have written policies or guidelines regarding how to wean infants from pharmacological treatment for neonatal abstinence syndrome (NAS)? [Metric: Standardization]

Select “Yes” if your center has written policies or guidelines regarding how to wean infants from pharmacological treatment for neonatal abstinence syndrome (NAS).

Select “No” if your center does not have written policies or guidelines regarding how to wean infants from pharmacological treatment for neonatal abstinence syndrome (NAS).

- d. Does your center have written policies or guidelines regarding communication with families regarding initiation of pharmacological treatment for neonatal abstinence syndrome (NAS)? [Metric: Family Integrated]

Select “Yes” if your center has written policies or guidelines regarding communication with families regarding initiation of pharmacological treatment for neonatal abstinence syndrome (NAS).

Select “No” if your center does not have written policies or guidelines regarding communication with families regarding initiation of pharmacological treatment for neonatal abstinence syndrome (NAS).

Individual Audit Metrics

Infant Characteristics

1. Case Number: _____

The case number is a unique sequential number (starting with "1" for the first case) assigned by the data collection program (on-line audit tool).

2. Level of care: _____ NICU / Special care or stepdown

3. Gestational age in weeks and days: Weeks: _____ Days: _____
Please enter the gestational age in weeks and days.

4. Infant's birth weight in grams: _____ (grams)

Please enter the infant's birth weight in grams.

5. Infant's chronological age (day of life)*: _____ (day of life)

Please enter the infant's chronological age. The date of birth counts as one calendar day. For example, an infant who was born on Monday and is being audited on Wednesday would be noted as 3 days of life.

* Date of birth counts as calendar day 1.

6. Current respiratory support infant is receiving (select one only):

Please enter the current support that the infant is receiving. Only one selection is valid for support. Whatever the highest support that the infant was on for the calendar day of the audit should be entered.

Assisted ventilation via endotracheal tube or tracheostomy (HFV or CMV)

Select "Assisted ventilation via endotracheal tube (HFV or CMV)" if the infant is intubated and receiving either high frequency ventilation (IMV \geq 240/minute) or conventional ventilation (intermittent positive pressure ventilation with a conventional ventilator with an IMV rate of < 240/minute).

Continuous Positive Airway Pressure or Noninvasive Ventilation

Select "Continuous Positive Airway Pressure or Noninvasive Ventilation" if the infant is on nasal prongs or nasal mask continuous distending pressure with or without intermittent mandatory ventilation (IMV) or if the infant is on nasal prongs,

nasal pharyngeal tube or nasal mask continuous distending pressure with or without IMV.

High Flow Nasal Cannula

Select “High flow nasal cannula” if the infant is on nasal cannula with a flow rate of ≥ 1 L/min.

Oxygen only

Select “Oxygen only” if the infant is on supplemental oxygen ($FiO_2 > 0.21$) of at the time of the audit. Oxygen can be given by low flow cannula or head box.

No support

Select no respiratory support if the infant is on none of the devices listed above.

Physical and Clinical Transitions

7. Included Transitions [check all that apply. Only the appropriate transitions will appear in your audit]

a. For infants ≤ 7 days of age at time of the audit

a1. Transfer from outside hospital: Yes / No

Select “Yes” if the infant is less than or equal to 7 days of age at time of the audit and was transferred from outside your hospital.

Select “No” if the infant is less than or equal to 7 days of age at time of the audit and was not transferred from outside your hospital.

a2. Born at your facility: Yes / No

Select “Yes” if the infant is less than or equal to 7 days of age at time of the audit and was born at your facility.

Select “No” if the infant is less than or equal to 7 days of age at time of the audit and was not born at your facility.

b. For infants > 7 days of age at time of the audit: Yes / No

Select “Yes” if the infant is greater than 7 days of age at time of the audit.

Select “No” if the infant is less than or equal to 7 days of age at time of the audit.

c. For infants of any age requiring diagnostic tests or procedures outside of the NICU within 7 days prior to the audit: Yes / No

Select “Yes” if the infant required diagnostic tests or procedures outside of the NICU within 7 days prior to the audit (regardless of the infant’s chronological age).

Select “No” if the infant did not require diagnostic tests or procedures outside of the NICU within 7 days prior to the audit (regardless of the infant’s chronological age).

d. For infants of any age requiring surgery outside of the NICU within 7 days prior to the audit: Yes / No

Select “Yes” if the infant required surgery outside of the NICU within 7 days prior to the audit (regardless of the infant’s chronological age).

Select “No” if the infant did not require surgery outside of the NICU within 7 days prior to the audit (regardless of the infant’s chronological age).

e. For infants of any age started on antibiotics within 7 days prior to the audit: Yes / No

Select “Yes” if the infant was started on antibiotics within 7 days prior to the audit (regardless of the infant’s chronological age).

Select “No” if the infant was not started on antibiotics within 7 days prior to the audit (regardless of the infant’s chronological age).

f. For infants of any age extubated within 7 days prior to the audit: Yes / No

Select “Yes” if the infant was extubated within 7 days prior to the audit (regardless of the infant’s chronological age).

Select “No” if the infant was not extubated within 7 days prior to the audit (regardless of the infant’s chronological age).

g. For infants of any age started on pharmacological therapy for neonatal abstinence syndrome within 7 days prior to the audit: Yes / No

Select “Yes” if the infant was started on therapy for neonatal abstinence syndrome within 7 days prior to the audit (regardless of the infant’s chronological age).

Select “No” if the infant was not started on therapy for neonatal abstinence syndrome within 7 days prior to the audit (regardless of the infant’s chronological age).

h. For infants requiring discharge planning within 7 days prior to the audit: Yes / No

Select “Yes” if the infant required discharge planning within 7 days prior to the audit (regardless of the infant’s chronological age).

Select “No” if the infant did not require discharge planning within 7 days prior to the audit (regardless of the infant’s chronological age).

i. For any infant cared for in your NICU.

Select “Yes” for all infants included in the audit.

If “Yes” refer to the specific patient category and answer the following questions:

[Communication] [Teamwork] [Standardization] [Family Integrated]

8. For infants \leq 7 days of age at time of the audit

a. Transfer from outside hospital:

ai. Is there a separate detailed note in the medical record regarding the transfer of the infant from the outside hospital? [Communication]

Select “Yes” if there is a separate detailed note in the medical record regarding the transfer of the infant from the outside hospital.

Select “No” if there is not a separate detailed note in the medical record regarding the transfer of the infant from the outside hospital.

aii. Is there specific mention in the medical record, either in the transfer note or in a separate note, of direct communication with the physicians/caregivers within six hours of admission? [Communication]

Select “Yes” if there is note in the medical record regarding direct communication with the physicians/caregivers at the referring hospital within six hours of admission (documented either in the Transfer or Admission Note or other formal note).

Select “No” if there is no note in the medical record regarding direct communication with the physicians/caregivers at the referring hospital within six hours of admission (documented either in the Transfer or Admission Note or other formal note).

aiii. Is there specific mention in the medical record, either in the transfer note or in a separate note, of direct communication with the family within six hours of admission? [Family Integrated]

Select “Yes” if there is note in the medical record regarding direct communication with the family within six hours of admission (documented either in the Transfer or Admission Note or other formal note).

Select “No” if there is no note in the medical record regarding direct communication with the family within six hours of admission (documented either in the Transfer or Admission Note or other formal note).

aiv. Is there specific mention of the time between receiving the transport call, the transport team leaving the hospital and the total time of transfer reflected in the medical record? [Standardization]

Select "Yes" if the time between receiving the transport call, the transport team leaving the hospital and the total time of transfer is documented in the medical record.

Select "No" if the time between receiving the transport call, the transport team leaving the hospital and the total time of transfer is not documented in the medical record.

b. Delivery room care:

bi. Is there a separate delivery room note from the delivery room team? [Communication]

Select "Yes" if there is a separate detailed note in the medical record from the delivery room team regarding delivery room care.

Select "No" if there is not a separate detailed note in the medical record from the delivery room team regarding delivery room care.

bii. Is there a specific mention in the admission note or other relevant note of post-admission discussions with the mother's caregivers? [Communication]

Select "Yes" if there is a note in the medical record regarding post-admission discussions with the mother's caregivers.

Select "No" if there is not a note in the medical record regarding post-admission discussions with the mother's caregivers.

biii. Is there a specific mention in the admission note or other relevant note of post-admission discussions with the family regarding the status of the infant? [Family Integrated]

Select "Yes" if there is a note in the medical record regarding post-admission discussions with the family regarding the status of the infant.

Select "No" if there is not a note in the medical record regarding post-admission discussions with the family regarding the status of the infant.

9. For ALL infants > 7 days of age at time of the audit

a. Is an estimated date or week of discharge noted in the medical record? [Communication]

Select "Yes" if there is note in the medical record regarding direct communication with the family within six hours of admission

(documented either in the Transfer or Admission Note or other formal note).

Select “No” if there is no note in the medical record regarding direct communication with the family within six hours of admission (documented either in the Transfer or Admission Note or other formal note).

- b. Does the chart reflect the specific screening needs required prior to discharge? These may include the need for retinopathy screening, metabolic screening, congenital heart disease screening, screening for congenital hip dysplasia, or immunizations. [Communication] [Standardization]

Select “Yes” if there is note in the medical record regarding direct communication with the family within six hours of admission (documented either in the Transfer or Admission Note or other formal note).

Select “No” if there is no note in the medical record regarding direct communication with the family within six hours of admission (documented either in the Transfer or Admission Note or other formal note).

- c. Is there a note addressing the social needs of the family, specifically relating to:
c1. transportation needs?

Select “Yes” if there is note in the medical record regarding the transportation needs of the family.

Select “No” if there is no note in the medical record regarding the transportation needs of the family.

- c2. food insecurity?

Select “Yes” if there is note in the medical record regarding the social needs of the family specifically relating to food insecurity.

Select “No” if there is no note in the medical record regarding the social needs of the family specifically relating to food insecurity.

- c3. home environment?

Select “Yes” if there is note in the medical record regarding the social needs of the family specifically relating to the adequacy of the home environment.

Select “No” if there is no note in the medical record regarding the social needs of the family specifically relating to the adequacy of the home environment.

[Family Integrated]

10. For infants of any age requiring diagnostic tests or procedures outside of the NICU or Special care/stepdown unit within 7 days prior to the audit

- a. Is there a specific procedure note in the medical record regarding the status of the infant's transfer to and from the diagnostic facility?

Select "Yes" if there is a specific procedure note in the medical record regarding the status of the infant's transfer to and from the diagnostic facility.

Select "No" if there is no specific procedure note in the medical record regarding the status of the infant's transfer to and from the diagnostic facility.

[if no, proceed to next transition]

- b. Were there any safety concerns noted in the note, including miscommunication with staff, physiological instability during transfer?

Select "Yes" if there were any safety concerns noted in the note, including miscommunication with staff, physiological instability during transfer.

Select "No" if there were no safety concerns noted in the note, including miscommunication with staff, physiological instability during transfer.

- c. Is there specific mention in the medical record of direct communication with the family regarding successful infant transfer to and from the diagnostic facility?

[Family Integrated]

Select "Yes" if there is a specific mention in the medical record of direct communication with the family regarding successful infant transfer to and from the diagnostic facility.

Select "No" if there is no mention in the medical record of direct communication with the family regarding successful infant transfer to and from the diagnostic facility.

11. For infants of any age requiring surgery outside of the NICU or Special care/stepdown unit within 7 days prior to the audit

- a. Is there a specific procedure note in the medical record regarding the status of the infant's transfer to and from the operating room?

Select "Yes" if there is a specific procedure note in the medical record regarding the status of the infant's transfer to and from the operating room.

Select "No" if there is no specific procedure note in the medical record regarding the status of the infant's transfer to and from the operating room.

[if no, proceed to next transition]

- b. Were there any safety concerns noted in the note, including miscommunication with staff, physiological instability during transfer?
Select “Yes” if there were any safety concerns noted in the note, including miscommunication with staff, physiological instability during transfer.
Select “No” if there were no safety concerns noted in the note, including miscommunication with staff, physiological instability during transfer.
- c. Is there specific mention in the medical record of direct communication with the family regarding successful infant transfer to and from the operating room? [Family Integrated]
Select “Yes” if there is a specific mention in the medical record of direct communication with the family regarding successful infant transfer to and from the operating room.
Select “No” if there is no mention in the medical record of direct communication with the family regarding successful infant transfer to and from the operating room.

12. For infants of any age started on antibiotics within 7 days prior to the audit

- a. Is there an order in the paper record or in the electronic medical record detailing when the antibiotics will be discontinued?
Select “Yes” if there is an order in the paper record or in the electronic medical record detailing when the antibiotics will be discontinued.
Select “No” if there is not an order in the paper record or in the electronic medical record detailing when the antibiotics will be discontinued.
- b. Has the infant received greater than 48 hours of systemic antibiotics?
Select “Yes” if the infant has received greater than 48 hours of systemic antibiotics. [If yes, answer 12Bi]
Select “No” if the infant has not received greater than 48 hours of systemic antibiotics. [if no, proceed to next transition]
- bi. If yes, is there a note in the medical record specifically indicating the rationale for this decision?
Select “Yes” if there a note in the medical record specifically indicating the rationale for this decision.
Select “No” if there is no note in the medical record specifically indicating the rationale for this decision.
- c. Are the parents aware (by interview at the bedside, from chart notes, or from staff reports) that their infant is on antibiotics? [Family Integrated]

Select "Yes" if the parents are aware (based on interview at the bedside, chart notes or from staff reports) that their infant is on antibiotics.

Select "No" if the parents are not aware (based on interview at the bedside, chart notes or from staff reports) that their infant is on antibiotics.

13. For infants of any age extubated within 7 days prior to the audit

- a. Was this a planned extubation?

Select "Yes" if this was a planned extubation.

Select "No" if this was a not a planned extubation.

- b. If the infant is very low birth weight, was caffeine started peri-extubation (immediately before or after extubation)?

Select "Yes" if caffeine started peri-extubation (immediately before or after extubation).

Select "No" if caffeine was not started peri-extubation (immediately before or after extubation).

- c. Is there specific mention in the medical record of direct communication with the family regarding the change in the infant's respiratory support? [Family Integrated]

Select "Yes" if there is a specific mention in the medical record of direct communication with the family regarding the change in the infant's respiratory support.

Select "No" if there is no mention in the medical record of direct communication with the family regarding the change in the infant's respiratory support.

14. For infants of any age started on therapy for neonatal abstinence syndrome within 7 days prior to the audit

- a. Is there specific mention in the medical record of direct communication with the family regarding initiation of treatment for neonatal abstinence syndrome? [Family Integrated]

Select "Yes" if there is a specific mention in the medical record of direct communication with the family regarding initiation of treatment for neonatal abstinence syndrome.

Select "No" if there is no mention in the medical record of direct communication with the family regarding initiation of treatment for neonatal abstinence syndrome.

15. For infants requiring discharge planning within 7 days prior to the audit

- a. Does the chart reflect an assessment of parent readiness for transition to home? [Family Integrated]

Select "Yes" if there is specific mention in the medical record regarding assessment of parent readiness for transition to home.

Select "No" if there is no mention in the medical record regarding assessment of parent readiness for transition to home.

- b. Has a formal evaluation of home safety been made? [Family Integrated]

Select "Yes" if there is specific mention in the medical record regarding formal evaluation of home safety been made.

Select "No" if there is no mention in the medical record regarding formal evaluation of home safety been made.

16. For any infant cared for in your NICU or Special care/stepdown unit on the day of the audit.

- a. Did the bedside nurse attending to the infant receive handoff using a structured communication tools [such as **SBAR** (Situation, Background, Assessment, Recommendation) or **I-PASS** (Illness severity, Patient summary, Action list, Situation awareness or contingency planning, Synthesis by receiver)]? [Communication] [Teamwork] [Standardization]

*Select "Yes" if the bedside nurse attending to the infant received handoff using a structured communication tools [such as **SBAR** (Situation, Background, Assessment, Recommendation) or **I-PASS** (Illness severity, Patient summary, Action list, Situation awareness or contingency planning, Synthesis by receiver)].*

*Select "No" if the bedside nurse attending to the infant did not receive handoff using a structured communication tools [such as **SBAR** (Situation, Background, Assessment, Recommendation) or **I-PASS** (Illness severity, Patient summary, Action list, Situation awareness or contingency planning, Synthesis by receiver)].*

- b. Since assuming care of the infant, were there critical issues uncovered that the nurse would have wanted to have been addressed in the handoff? [Communication]

Select "Yes" if there were critical issues uncovered that the nurse would have wanted to have been addressed in the handoff since assuming care of the infant.

Select "No" if there were no critical issues uncovered that the nurse would have wanted to have been addressed in the handoff since assuming care of the infant.

APPENDIX

Data forms:

1. Form 1: Unit level Data Form



iNICQ 2019 VON
Day Audit Part One I

2. Form 2: Patient Level Data Form



iNICQ 2019 VON
Day Audit Part Two I