CPQCC Optional All NICU Admits Database (ANAD) Documentation

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1 Introduction

The optional All NICU Admissions Database (ANAD) is a tool provided to CPQCC members that allows tracking all NICU admissions. The database is intentionally kept simple and minimal. This document describes the ANAD, and the ANAD management tools available on the NICU Data website.

The ANAD was first introduced in 2017. In 2018 several additional features were implemented based on user feedback. In November 2020, the ANAD database and user interface (UI) were updated again to address additional user requests as well as to test the ability of linking the ANAD to tertiary administrative data sources. A link to tertiary data sources such as the OSHPD discharge data enables CPQCC to provide aggregated reports on all NICU admissions on discharge diagnoses, resource use and more while keeping the ANAD data entry requirements minimal.

1.1   What are the advantages of participating in the optional All NICU Admits Database?

- Allows updated NICU admissions volume on NICU Reports dashboards.
- Allows updated volume and other control charts on NICU Reports for those items that require data on all NICU infants (e.g., infant deaths for the first year of life relative to all NICU admissions).
- Allows use of all NICU admissions as denominator for big baby metrics.
- Allows population of CCS form Section A row 4 (NICU deaths after day 28).
- Allows population of CCS form Section B.
- Allows population of CCS form Section C.
- Allows population of CCS form Section D row 2 (inborn NICU admits by GA).
- Allows better verification of row 1 of CCS form Section E (should be >= cumulative initial LOS).
- Allows population of CCS form Section E "Total number of NICU days of IM or IV antibiotic exposure."
- Allows population of CCS form Section F "Number of central line days by birth weight."
- Allows population of CCS form Section F "Number of CLABSI by birth weight."
- Provides the ability to track infants who are not CPQCC eligible but affect a NICU's resource use.
- New in 2020: Allows linkage to tertiary data sources allowing aggregated reports for all NICU admissions on additional metrics (e.g., discharge diagnoses).
- New in 2020: Ability to formulate custom queries for all NICU admissions.
- New in 2021: NICU Reports ANAD focus board.
- Optional.

1.2   What are the disadvantages of participating in the optional All NICU Admits Database?

- Additional data preparation for CSV upload, and / or
- Additional data entry and need to understand the data entry tool offered.

1.3   How does the NICU Admission/Discharge (A/D) Database differ from the Optional All NICU Admits Database?

To be clear, in this document the term **CPQCC NICU A/D Database** is used to describe the CPQCC database that captures the Admission/Discharge form. The term **Optional ANAD** or **ANAD** is used to describe the Optional All NICU Admits Database, the focus of this document.

The Optional ANAD is a superset of the NICU A/D Database. All NICU stays are captured irrespective of CPQCC eligibility requirements.

The definition of a data row (record) in the Optional ANAD differs from the definition of a data row (record) in the NICU A/D database. This difference is best explained in the context of the definition of **episode of care**:

> An **episode of care** is defined as the time from an infant's NICU admission until the infant's discharge to home (or home equivalent location such as foster care) or death.

This definition implies that an infant's episode of care is not over when he/she is transported outside the hospital where the NICU is located or transferred to another unit within the NICU hospital. During one episode of care, an infant might experience multiple NICU admissions to the same NICU.

A new episode of care starts with each re-admission from home (or a home-equivalent location).

For the CPQCC NICU A/D database one episode of care is represented by a single row (record). This row summarizes an infant's experience from the first NICU admission and including re-admission after transport-out and transport back. The transport section of the A/D form summarizes additional transport events and the final disposition as discharge home or death. Follow-up tracking stops once the infant reaches 1 year of age.

For the Optional ANAD, an episode of care might be represented by multiple rows as shown in this example:

Care Episode 1	NICU Stay 1	Infant admitted to NICU immediately after birth, transported out.
	NICU Stay 2	Infant re-admitted to NICU after transport-out, transferred to another area of the NICU hospital.
	NICU Stay 3	Infant re-admitted to NICU from another area of the NICU hospital, discharged home.
Care Episode 2	NICU Stay 4	Infant re-admitted from home, transferred to another unit within NICU hospital.
	NICU Stay 5	Infant re-admitted to NICU after transfer to another area of the NICU hospital, discharged to long-term care.

In this example, the first care episode is described by Rows 1, 2 and 3, and the second care episode is described by Rows 4 and 5. If this infant was CPQCC eligible, this infant's experience would be described by 2 data rows in the CPQCC NICU A/D Database.

2   All NICU Admits Database Field Definitions

The following table describes the field definitions of the ANAD. The field names apply to CSV files uploaded or downloaded through the All NICU Admits Database User Interface (ANAD UI) on the NICU Data (cpqccdata.org) website.

For more details on CSV files and the upload process, please see Section 3.2.

For more details on the on-line data entry tool, see Section 3.1.

For more details on the CSV files that can be downloaded, see Section 0.

The table shows basic logic rules that are enforced in the Notes column.

The ANAD setup allows NICUs to connect NICU stays for the same infant. The field [refnum] is infant-specific. The field [readmit] is a readmission counter. Both fields together uniquely identify one row in the ANAD.

The fields [refnum], [readmit], [bdate] and [adate] are required to start a new record.[1]

The column CCS form / Linkage identifies fields that are required to fully populate the CCS form and/or facilitate linkage to tertiary data sources.

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[1] It is acceptable to not use the same [refnum] for admissions of the same infant, i.e., it is possible to assign the [refnum] on a per stay rather than per infant basis. It is still necessary though to correctly identify the admission type to distinguish continuing and new care episodes. The latter distinction is important for the correct population of the CCS form.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
refnum	Internal Reference Number	{1-99999999}	Either [refnum] or [id] required	Internal reference number that allows associating a NICU's internal record with what is submitted in the ANAD. This should not be an MRN. Depending on a NICU's preference the reference number can be assigned on a **per infant** basis or on a **per NICU** stay basis. If assigned to track an infant, use the Readmission Counter to identify readmission of the same infant. If a NICU uploads the ANAD as a CSV file, the NICU must manage the assignment of the [refnum]. If a NICU enters data through the on-line tool provided, the [refnum] is automatically generated as the next sequential number if the field on the data entry form is left empty. If [refnum] is not submitted as a field entirely consisting of numbers, the reference number is rejected.
readmit	Readmission Counter	{1-99, empty if never previously admitted}	optional	The internal reference number [refnum] can either be assigned on an infant basis or on a NICU stay basis. If assigned on an infant basis, it is possible to track re-admissions of the same infant using the Readmission Counter. To optimize use, the readmission counter should identify re-admissions in the order in which they occurred (i.e., reflect the order implied by the admission date). If a NICU enters data through the on-line tool provided, entering a new re-admission of an infant who was previously admitted to the NICU can be accomplished by a) looking up the [refnum] for the first admission and entering this [refnum] in the on-line form; b) entering the Readmission Counter for the re-admission.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
				Once two or more stays of the same infant are linked, all infant level variables are synced ([bdate], [btime], [bwgt], [gestage], [multiple], [birthlocation], [sex], [delmode], [mdate], [mrace], [mhisp]).
				If [readmit] is submitted as an integer of 1 through 99, another ANAD record with the same [refnum] must be present, otherwise the record is rejected.
id	fCan be used instead of [refnum] and [readmit]	[refnum] or [refnum].[readmit]	Either [refnum] or [id] required	As an alternative to providing [refnum] and [readmit], a single field named [id] can be provided. **Only one of the two should be provided:** • [refnum] **and** [readmit]**, or** • [id]**.** **If both are provided, the [id] field is ignored.** The CSV download of the ANAD always includes the [id] field. For more details, see Section 0.
hospno	Center ID Number	{0001-9998}	optional	CPQCC center network ID number assigned by the CPQCC data center. The on-line data entry tool generates this field automatically. For CSV uploads, if the [hospno] field is not included in the CSV file, it is set based on the name of the CSV file being uploaded, see Section 3.2.
bdate	Birth Date	{MM/DD/YYYY or YYYY/MM/DD or MM-DD-YYYY or YYYY-MM-DD or MM.DD.YYYY or YYYY.MM.DD or MMDDYYYY or MMDDYY or MM/DD or MM-DD	Required	Date of birth of infant. The separator can be a forward slash (/), a period (.) or a dash (-). It is also possible to not use a separator. If a separator is not used (MMDDYY or MMDDYYYY), MM and DD must be provided as 2 digits (i.e., 1-digit months and days must have a leading zero). If a separator is used, it is acceptable to enter single digit months and days as a single digit. If the birth date is provided without the year of birth (e.g., MMDD), the current year for data entry is used.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
		or MMDD or DDmmmYYYY or DDmmmYY} *not case-sensitive*		A date formatted with a 3-charcter word month is acceptable, e.g., 12DEC2020. The on-line data entry tool provides a date picker to enter the birth date. Also see 3.1.1. If [bdate] is not provided or does not refer to a birth date for birth year 2016 or later, the record is rejected.
btime	Birth Time	{M or MM or HMM or HHMM or HH:MM, 9999, 99:99, UNK} *not case-sensitive*	Desirable for Linkage	Time of birth of infant on the 24-hour clock from 00:00 to 23:59. If birth time is submitted as HMM, the field is padded with one zero, i.e., interpreted as 0HMM. If birth time is submitted as MM, the field is padded with 2 zeros, i.e., interpreted as 00MM. If birth time is submitted as M, the field is padded with 3 zeros, i.e., interpreted as 000M. 9999, 99:99, UNK are all interpreted as Unknown. Special rules for CSV files: If time is submitted as HH:MM{AM, PM}, e.g., 2:10PM, the intake routine will convert the entry to the corresponding 24-hour time value, e.g., 14:10. If time is submitted as HH:MM:xx, the :xx part is ignored. If time is submitted as HH:MM.xx, the minutes are rounded corresponding to the decimals. The on-line data entry tool provides a time picker to enter the birth time. Also see 3.1.1. If the [btime] field cannot be interpreted as a time, this field is not populated.
bwgt	Birth Weight	{201-9998, 9999, UNK}	Required	Infant birth weight.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
		not case-sensitive		If this field is submitted with a comma or other separators, these separators are removed prior to processing. {9999, UNK} are both interpreted as Unknown. If the [bwgt] field cannot be interpreted as an integer ranging from 201 to 9998 or as Unknown, this field is not populated.
gestage	Gestational Age	{WW.D or WWD or WW/D or WW-D or WW with WW in {20-50} and D in {0-6}, 9999, 999, 99, 99.9, 99/9, 99-9, 99.9, UNK} *not case-sensitive*	Required	Gestational age in weeks and days. This field should be 3 or 4 positions long. If it is 4 positions long, the third character should be a separator (e.g., . (period)). The WW portion should be a number from 20 and 50. The D portion should be a number from 0 and 6. If the gestational age is specified as WW, D is assumed to be 0 (zero). {9999 ,99.9, 99/9, 99-9, 999, 99, UNK} are all interpreted as Unknown. If [gestage] cannot be interpreted as a week ranging from 20 to 50 and day ranging from 0 to 6 or as Unknown, this field is not populated. Special rules for CSV files: Prior to processing the field value, all spaces are removed. For instance, if the field value in the CSV file is 37 / 4, prior to processing this value is converted to 37/4.
multiple	Multiple Status	{S,1A,2A,2B,3A,3B, 3C,4A,4B,4C,4D,5A, 5B,5C,5D,5E,6A,6B, 6C,6D,6E,6F,7A,7B, …, 99, UNK} *not case-sensitive*	Required	Number of infants and birth order. S=Singleton, 1A=Multiple gestation for which only one infant was delivered, etc. {99, UNK} are both interpreted as Unknown. If [multiple] cannot be interpreted as one of the acceptable values, this field is not populated.
sex	Infant Sex	{0, F, Female=**Female** 1, M, Male=**Male**	Required for linkage	Infant sex as Male, Female, Undetermined or Unknown.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
		2, Ambiguous, Ambig, ?, Undetermined, Undet = **Undetermined** 9, UNK, Unknown, U = **Unknown**}		Use Undetermined when sex is not assigned as male or female by the time of discharge because it is considered as undetermined (or "ambiguous") by the clinical team.
delmode	Delivery Mode	{0, C, Cesarean, Caesarean, C/S, CS, CSECTION, C-SECTION, CSEC, CES=**Cesarean Section** 1, V, Vaginal, Spontaneous, VBAC=**Vaginal** 9, U, UNK, Unknown = **Unknown**}	Required for linkage	Use Cesarean for any abdominal delivery. Use Vaginal for any normal or operative (forceps, vacuum) vaginal delivery. Use Unknown if this information cannot be obtained. Special rules for CSV files: If the field for delivery mode includes one of CESAREAN, CAESAREAN, C-SECTION, CSECTION, CS, C/S, the entry is classified as Cesarean Section, e.g., C/S (primary with labor) is classified as Cesarean Section. Make sure to never use a negative (e.g., do not use Not C/S as field value!). Case does not matter! If the field for delivery mode does not include one of CESAREAN, CAESAREAN, C-SECTION, CSECTION, CS, C/S and includes at least one of vaginal, spontaneous or VBAC, the entry is classified as Vaginal. Case does not matter!
mdate	Mother's Birth Date	{MM/DD/YYYY or YYYY/MM/DD or MM-DD-YYYY or YYYY-MM-DD or MM.DD.YYYY or YYYY.MM.DD or MMDDYYYY or MMDDYY or DDmmmYYYY or	Required for Linkage	Mother's date of birth. The separator can be a forward slash (/), a period (.) or a dash (-). It is also possible to not use a separator. If a separator is not used (MMDDYY or MMDDYYYY), MM and DD must be provided as 2 digits (i.e., 1-digit months and days must have a leading zero). If a separator is used, it is acceptable to enter single digit months and days as a single digit. If the year is formatted as 2 digits, the century is inferred based on the implied maternal age.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
		DDmmmYY or DDmmm} *not case-sensitive*		A date formatted with a 3-charcter word month is acceptable, e.g., 12DEC1990. The on-line data entry tool provides a date picker to enter the admission date. Also see Section 3.1.1. If [mdate] cannot be interpreted as a date this field is not populated.
mrace	Mother's Race	{Black, 1 = **Black** Asian, 4 = **Asian** Native Hawaiian, Hawaiian, Pacific, Pacific Islander, 6 = **Native Hawaiian / Pacific Islander** American Indian, Am Indian, Alaskan, Alaska Native, 5 = **Am Indian / Alaska Native** White, Caucasian, W, 3 = **White** Other, 7 = **Other** Unknown, Unk, U, 9 = **Unknown**}	Optional	Specify race of the biological mother. Specify Black or African American if the biological mother is a person having origins in any of the black racial groups of Africa. Specify Asian if the biological mother is a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. Specify Native Hawaiian or Other Pacific Islander if the biological mother is a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands Specify American Indian or Alaska Native if the biological mother is a person having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment. Specify White if the biological mother is a person having origins in any of the original peoples of Europe, the Middle East, or North Africa. Specify Other if none of the race categories above applies to the biological mother. Specify Unknown if the race of the biological mother is not known.
mhisp	Mother's Hispanic Origin	{Hispanic, 1, Yes = **Hispanic** Non-Hispanic, 0,	Optional	Specify Hispanic Origin of the biological mother.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
		No = **Non-Hispanic** Unknown, Unk, U, 9 = **Unknown**}		Specify Hispanic if the biological mother is a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race.
				Specify Non-Hispanic if the biological mother is not of Hispanic or Latino origin as defined above.
				Select Unknown if the mother's Hispanic origin is not known.
adate	Admission Date	{MM/DD/YYYY or YYYY/MM/DD or MM-DD-YYYY or YYYY-MM-DD or MM.DD.YYYY or YYYY.MM.DD or MMDDYYYY or MMDDYY or MM/DD or MM-DD or MMDD or DDmmmYYYY or DDmmmYY} *not case-sensitive*	Required	Date of admission to NICU. The separator can be a forward slash (/), a period (.) or a dash (-). It is also possible to not use a separator.
				If a separator is <u>not</u> used (MMDDYY or MMDDYYYY), MM and DD must be provided as 2 digits (i.e., 1-digit months and days must have a leading zero). If a separator is used, it is acceptable to enter single digit months and days as a single digit.
				If the admission date is provided without the year component (e.g., MMDD), the current year for data entry is used.
				A date formatted with a 3-charcter word month is acceptable, e.g., 12DEC2020.
				The on-line data entry tool provides a date picker to enter the admission date. Also see Section 3.1.1.
				If [adate] cannot be interpreted as a date or if [adate] is prior to [bdate] or if [adate] is in the future, this field is not populated.
atime	Admission Time	{M or MM or HMM or HHMM or HH:MM, 9999, 99:99, UNK} *not case-sensitive*	Optional	Time of admission to NICU on the 24-hour clock from 00:00 to 23:59.
				If admission time is submitted as HMM, the field is padded with one zero, i.e., interpreted as 0HMM.
				If admission time is submitted as MM, the field is padded with 2 zeros, i.e., interpreted as 00MM.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
				If admission time is submitted as M, the field is padded with 3 zeros, i.e., interpreted as 000M.
				9999, 99:99, UNK are all interpreted as Unknown.
				Special rules for CSV files:
				If time is submitted as HH:MM{AM, PM}, e.g., 2:10PM, the intake routine will convert the entry to the corresponding 24-hour time value, e.g., 14:10.
				If time is submitted as HH:MM:xx, the :xx part is ignored.
				If time is submitted as HH:MM.xx, the minutes are rounded corresponding to the decimals.
				The on-line data entry tool provides a time picker to enter the admission time. Also see Section 3.1.1.
				If [atime] cannot be interpreted as a time of day or if [bdate], [btime], [atime] and [adate] imply that the infant was admitted to the NICU prior to birth, this field is not populated.
atype	Type of Admission	{0=**Inborn never home immediately admitted to the NICU after birth** 1=**Inborn never home admitted from another unit within my hospital** 2=**Born at co-located hospital never home**	Required	**Categories 0 through 4 should be used if an infant is admitted to your NICU for the first time.** **Categories 110, 111, 130, 131 and 14 should be used if an infant has stayed at your NICU before and is being re-admitted.** **See flow diagram in Section 11.9.** **0=Inborn never home and immediately admitted to NICU after birth** born at hospital where the NICU is located and never discharged home (for non-satellite NICUs), transported out or transferred out and admitted to the NICU immediately following birth.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
		3=Outborn, admitted to this NICU from another hospital or non-hospital location or from a unit within my hospital 4=Admitted from home or from another unit within my hospital after previous home discharge 110=Re-admitted from another unit within my hospital (continuing care episode) 111=Re-admitted from another unit within my hospital (new care episode) 130=Re-admitted from another hospital (continuing care episode) 131=Re-admitted from another		**1=Inborn never home admitted from another unit within my hospital** born at hospital where NICU is located, never discharged home, admitted to another unit within the hospital after birth (e.g., well baby unit), then admitted to NICU. **2=Born at Co-Located Hospital never home** born at location where the NICU is located and never discharged home (for satellite NICUs) or transported out. **3=Outborn and Admitted to this NICU from another hospital or non-hospital location or unit in my hospital** Outborn at another hospital not located where the NICU is located. Also includes infants who were born in outpatient settings, at home, in transit on the way to the hospital, or infants who were born at another location, then admitted to another unit at your hospital and subsequently admitted to this NICU. This should be the first time this infant was ever at your NICU. **4=Admitted from home or from another unit within my hospital after home discharge** Admitted from a home or home equivalent location or admitted from another unit within my hospital after prior discharge home. This should be the first time this infant was ever at your NICU. The infant might be born at your hospital or outborn at another hospital. The infant might also have been admitted to another hospital for this care episode prior to coming to your NICU. **110=Re-admitted from another unit within my hospital (continuing care episode)** Re-admitted to this NICU from another unit within my hospital. Infant has stayed at this NICU previously during this episode of care and might or might not have been previously home. This stay does not count towards NICU admissions captured on the CCS form. **111=Re-admitted from another unit within my hospital (new care episode)** Re-admitted to this NICU from another unit within my hospital. Infant has stayed at this NICU previously, but not during this episode of care and must have been home at least once. **130=Re-admitted from another hospital (continuing care episode)** Re-admitted to this NICU from another hospital. Infant has stayed at this NICU

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
		hospital (new care episode) 14=**Re-admitted from home**}		previously during this episode of care and might or might not have been previously home. This stay does not count towards NICU admissions captured on the CCS form. **131=Re-admitted from another hospital (new care episode)** Re-admitted to this NICU from another hospital. Infant has stayed at this NICU previously, but not during this episode of care and must have been previously home at least once. **14=Re-admitted from home** Re-admitted to this NICU from home or a home equivalent location after a prior discharge home. Only use this option if the infant has previously stayed at your NICU. If [atype] cannot be interpreted as one of the categories listed, this field is not populated.
acutetrsin	Acute Admission	{1, Y, Yes=**Acute** 0, N, No=**Non-Acute**} *not case-sensitive*	Required	For infants who are admitted or re-admitted from home, another hospital or non-hospital location, or from a unit within the NICU's hospital after previous discharge home: **Acute** = Admission of an infant with medical problems that require urgent care. Acute admissions include infants acutely transported to the NICU, infants admitted from home, or might include infants admitted from another unit in your hospital. If the infant is an acute transport-in then the care that is medical, diagnostic, or surgical therapy is not provided, or cannot be provided due to temporary staffing/census issues at the referring hospital. **Non-Acute** = A Non-acute admission is an admission for growth care, discharge planning care, chronic care, convalescent care, and/or hospice care. If an infant is a non-acute transport-in, then the infant's initial medical, diagnostic, and surgical needs have been met and the infant's condition has been stabilized. The medical needs of non-acute transports-in may range from extensive and extremely complex care to minimal care for feeding and growth.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
				[acutetrsin] is only populated for infants admitted from home, admitted from another unit of my hospital after prior home discharge or infants transported to the NICU from another hospital or non-hospital location.
				If this field is not coded as 1, 'Y' or 'Yes', it is assumed to be not applicable for admission types 0, 1, 2, 110 or 111, and it is assumed to be Non-Acute for all other admission types.
				Note that the [acutetrsin] indicator is important for identifying higher acuity admissions after DOL 28. While admissions prior to DOL 28 can be recognized as higher acuity through the NICU DB Record ID number [cpqccid], for transfers or transports after DOL28 the [acutetrsin] fulfills this function.
adx0–adx16	Admission Reason(s)	{1, Y, Yes, X=**Reason for admission** 0, N, No=**not a Reason for Admission**} *not case-sensitive*	Optional	Up to 17 possible reasons for the admission can be checked: adx0: Suspected infection adx1: Respiratory distress adx2: Hypoglycemia adx3: Hyperbilirubinemia adx4: Temperature instability adx5: Feeding difficulties adx6: BW/GA per policy adx7: Small for gestational age adx8: Perinatal transitional monitoring adx9: Neonatal abstinence syndrome adx10: Dysmorphic/chromosomal anomaly adx11: Apnea/cyanotic event adx12: Cardiac event

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
				`adx13`: Seizure
				`adx14`: Transport-In for insurance reasons
				`adx15`: Transport-In for bed availability reasons
				`adx16`: Other (specify additional details in [`admtnotes`] field)
				The FAQ section 11.15 provides additional information for each of these admission reasons.
`admtnotes`	Admission Notes	Text (up to 256 characters)	Optional	Notes regarding this admission, e.g., reason for admission, custom filter specification.
				For instance, if you would like to mark an admission for follow-up, add a note, e.g., follow-up required in this field. The ANAD UI provides the Search (Section 7.1) and Query (Section 7.2) tools to easily find these records.
				For a CSV file, this field must be enclosed in quotes (") if it includes any commas.
`birthlocation`	Location of Birth	Text (up to 256 characters) or 6-digit OSHPD code	Desirable for linkage	The location of birth is optional and can be provided as a 6-digit OSHPD facility code or name / abbreviated name.
				For a CSV file, this field must be enclosed in quotes (") if it includes any commas.
`reflocation`	Referral Location	Text (up to 256 characters) or 6-digit OSHPD code	Desirable for linkage	The referring location for the current admission is optional and can be provided as a 6-digit OSHPD facility code, name, abbreviated name, or location in your hospital.
				For a CSV file, this field must be enclosed in quotes (") if it includes any commas.
`abxdays`	Antibiotic Use Days	{0-366}, {0-366} + {0-366}	Required if ABX days on CCS form is	The total number of NICU days during this stay with IM or IV antibiotic exposure for any purpose in the year of admission and the year following the admission if the admission overlaps more than 1 year.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
			to be populated, otherwise optional	*Example 1:* If an infant is admitted on 1/1/2018 and discharged on 2/20/2018 and received at least one exposure to antibiotics on 12 days, this field should be specified as 12. The largest possible number of days with antibiotic exposure is 51 days.
				E*xample 2:* If an infant was admitted on 12/1/2017 and discharged on 2/20/2018 and received antibiotics on 5 days in 2017 and 7 days in 2018, this field should be specified as 5+7. The largest possible number of days of antibiotic exposure in 2017 is 31 days and in 2018 is 51 days.
				Antibiotic exposure is based on the use of antibacterial and antifungal agents, <u>not</u> antiviral agents.
				Any exposure on a given day counts as one day.
				Note that the length of the NICU stay – based on [adate] and [ddate] – is enforced as the maximum possible value for this item.
cldays	Central Line Days	{0-999}	Required if central line days on CCS form are to be populated, otherwise optional	The total number of NICU days during this stay on which the infant had an umbilical catheter in place or had 1 or more non-umbilical central line(s) in place. Note that the length of the NICU stay – based on [adate] and [ddate] – is enforced as the maximum possible value for this item.
clabsi	CLABSI	{1, Y, Yes=**CLABSI occurred**; 0, N, No=**no CLABSI**}	Required if CLABSIs on CCS form are to be populated, otherwise optional.	Yes/No indicator for CLABSI during this stay. Note that even though there should obviously be a logical relationship between central line days and central line associated infections, we have not implemented such a dependency as some members might opt to track CLABSIs, but not track central line days.
ddate	NICU Discharge Date	{MM/DD/YYYY or YYYY/MM/DD or MM-DD-YYYY or YYYY-MM-DD or	Required	Date of discharge **from NICU**. The separator can be a forward slash (/), a period (.) or a dash (-). It is also possible to not use a separator.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
		MM.DD.YYYY or YYYY.MM.DD or MMDDYYYY or MMDDYY or MM/DD or MM-DD or MMDD or DDmmmYYYY or DDmmmYY} *not case-sensitive*		If a separator is <u>not</u> used (MMDDYY or MMDDYYYY), MM and DD must be provided as 2 digits (i.e., 1-digit months and days must have a leading zero). If a separator is used, it is acceptable to enter single digit months and days as a single digit. If the discharge date is provided without the year of birth (e.g., MMDD), the current year for data entry is used. A date formatted with a 3-charcter word month is acceptable, e.g., 12DEC2020. The on-line data entry tool provides a date picker to enter the birth date. Also see Section 3.1.1. If [ddate] cannot be interpreted as a date or if [ddate] is prior to [bdate] or if [ddate] is prior to [adate] or if [ddate] is in the future, this field is not populated. If discharge date and admission date are both provided, the field length of stay [LOS] is calculated as discharge date minus admission date plus 1. The [LOS] field is also included in downloads of the ANAD.
disp	NICU Disposition	{1=**Home from this NICU** 2=**Transport-Out** 3=**Died in this NICU** 4=**Transfer to another unit within my hospital** 9=**Unknown**}	Required	Disposition for this infant for this stay. **Home from this NICU** - discharged home from NICU (includes discharge to foster care or locations equivalent to home, e.g., hospice not affiliated with an acute care hospital). **Transported-Out** - transported to another hospital location. **Died in this NICU** - died in the NICU at the end of the NICU stay. **Transfer to another unit within my hospital** - transferred to another unit within my hospital (e.g., PICU) and subsequently either discharged home or transported-out. If [disp] cannot be interpreted as one of the categories listed, this field is not populated.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
`ddx0-ddx13, ddx16`	Problems at Discharge	{1, Y, Yes, X=**Discharge DX** 0, N, No=**not a Discharge DX**} *not case-sensitive*	Required for CCS LAINA mandate	Up to 15 possible discharge diagnoses can be checked: `ddx0`: Infection or suspected infection `ddx1`: Respiratory distress `ddx2`: Hypoglycemia `ddx3`: Hyperbilirubinemia `ddx4`: Temperature instability `ddx5`: Feeding difficulties `ddx6`: BW/GA per policy `ddx7`: Small for gestational age `ddx8`: Perinatal transitional monitoring `ddx9`: Neonatal abstinence syndrome `ddx10`: Dysmorphic/chromosomal anomaly `ddx11`: Apnea/cyanotic event `ddx12`: Cardiac event `ddx13`: Seizure `ddx16`: Other The FAQ section 11.15 provides additional information for each of these discharge diagnoses.
`dispnotes`	Disposition Notes		Optional	Additional discharge notes including description for Other problem at discharge.
`xferlocation`	Transport / Transfer Location	Text {up to 256 characters} or 6-digit OSHPD code	Desirable for linkage	For infants who were transported out or transferred out, the location where they were transported or transferred to. This location can be another NICU or another hospital or a unit within your hospital.

| Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
acutetrsout	Acuity of Transport-Out	{1, Y, Yes=**Acute** 0, N, No=**Non-Acute**} *not case-sensitive*	Required	For infants transported out: **Acute** = An infant with medical problems that require acute resolution for survival who is transported-out in order to obtain medical, diagnostic, or surgical therapy that is not provided, or that cannot be provided due to temporary staffing/census issues at the referring hospital. A transport is considered acute if the primary reason for the transport was NOT for feeding/growing or convalescent reasons. Acute transports-out occur to get resources that are not available at the sending hospital. **Non-Acute** = Non-acute Transports-out are infants whose initial medical/surgical needs have been met, whose condition has been stabilized and who is transported-out in order to obtain growth care, discharge planning care, chronic care, and/or hospice care. The medical needs of non-acute transports-out may range from extensive and extremely complex care to minimal care for feeding and growth. [acutetrsout] is only populated for infants who were transported out. If this field is not coded as 1, 'Y' or 'Yes', it is assumed to be not applicable for dispositions 1, 3, and 4, and it is assumed to be Non-Acute for disposition 2.
ddatehsp	Hospital Discharge Date	{MM/DD/YYYY or YYYY/MM/DD or MM-DD-YYYY or YYYY-MM-DD or MM.DD.YYYY or YYYY.MM.DD or MMDDYYYY or MMDDYY or MM/DD or MM-DD or MMDD or	Required	**This field only applies if [disp]=4.** Date of discharge **from hospital after transfer to another unit**. The separator can be a forward slash (/), a period (.) or a dash (-). It is also possible to not use a separator. If a separator is <u>not</u> used (MMDDYY or MMDDYYYY), MM and DD must be provided as 2 digits (i.e., 1-digit months and days must have a leading zero). If a separator is used, it is acceptable to enter single digit months and days as a single digit. If the birth date is provided without the year of birth (e.g., MMDD), the current year for data entry is used.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
		DDmmmYYYY or DDmmmYY} *not case-sensitive*		A date formatted with a 3-charcter word month is acceptable, e.g., 12DEC2020. The on-line data entry tool provides a date picker to enter the birth date. Also see …sectionref… If [ddatehsp] cannot be interpreted as a date or if [ddatehsp] is prior to [ddate] or if [ddatehsp] is in the future, this field is not populated.
disphsp	Hospital Disposition	{1=**Discharged alive**; 3=**Died**}	Required	**This field only applies if [disp]=4.** Hospital disposition for this infant. **Discharged alive** – the infant was discharged alive after transfer to another unit within my hospital. **Died** – the infant died after transfer to another unit within my hospital. If [disphsp] cannot be interpreted as one of the categories listed, this field is not populated.
cpqccID	NICU A/D Record ID Number	{1-99999}	Required	The NICU A/D Record ID (CPQCC Record ID) number if infant qualifies for CPQCC. This field is used to distinguish high vs low acuity NICU admissions. Note that the [cpqccID] can also be used for readmissions to your NICU, in other words, you can use the same [cpqccID] for different infant stays. *Starting with October 2022, if you are entering your data on-line and if you use reference numbers to refer to an infant's first NICU admission, the CPQCC ID number will be carried forward to continuing care admissions.*
icd_adx1- icd_adx50	Up to 50 ICD-10-CM Admission Diagnosis Codes	Valid ICD-10-CM Diagnosis Codes *Not case-sensitive, all non-alphanumeric characters will be*	Optional	Starting with October 2022, we are offering members the submission of ICD-10-CM diagnosis codes instead of admission reasons (adx0-adx16). If admission reasons are not coded and ICD-10-CM diagnosis codes are, the ICD-10-CM diagnosis codes will be mapped to admission reasons adx0-adx13 and

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
		removed prior to processing		`adx16`. Users can review the mappings used for the most recent CSV file upload and modify the ANAD record as needed if the mapping is judged inappropriate. Users may submit up to 50 diagnosis codes. The CSV file might only include as many diagnosis fields as needed, i.e., only 20 codes might be included. The numbering for any diagnosis codes must start at 1 and must continue sequentially. For instance, if 4 diagnosis codes should be coded for an admission, then these should go into the fields `icd_adx1`, `icd_adx2`, `icd_adx3`, `idc_adx4`. Any invalid diagnosis codes are ignored. **If an ANAD record already exists with admit reasons coded and the CSV files includes only ICD-10-CM admission diagnosis codes (not admit reasons), the existing admit reasons are not updated.**
`icd_ddx1-icd_ddx50`	Up to 50 ICD-10-CM Discharge Diagnosis Codes	Valid ICD-10-CM Diagnosis Codes *Not case-sensitive, all non-alphanumeric characters will be removed prior to processing*	Optional	Starting with October 2022, we are offering members the submission of ICD-10-CM diagnosis codes instead of problems at discharge (`ddx0-ddx13, ddx16`). If problems at discharge are not coded and ICD-10-CM diagnosis codes are, the ICD-10-CM diagnosis codes will be mapped to problems at discharge `ddx0-ddx13` and `ddx16`. Users can review the mappings used for the most recent CSV file upload and modify the ANAD record as needed if the mapping is judged inappropriate. Users may submit up to 50 diagnosis codes. The CSV file might only include as many diagnosis fields as needed, i.e., only 20 codes might be included. The numbering for any diagnosis codes must start at 1 and must continue sequentially. For instance, if 4 diagnosis codes should be coded for an admission, then these should go into the fields `icd_ddx1`, `icd_ddx2`, `icd_ddx3`, `idc_ddx4`. Any invalid diagnosis codes are ignored.

Field Name	Description	Possible Values	CCS Form / Linkage / Optional	Notes
				If an ANAD record already exists with problems and discharge coded and the CSV files includes only ICD-10-CM discharge diagnosis codes (not problems at discharge), the existing problems at discharge are not updated.

3   All NICU Admits Database (ANAD) Data Entry

This section is best read while logged on to cpqccdata.org and following along with the steps shown below. You can enter a test record; the ANAD allows you to easily delete such test records.
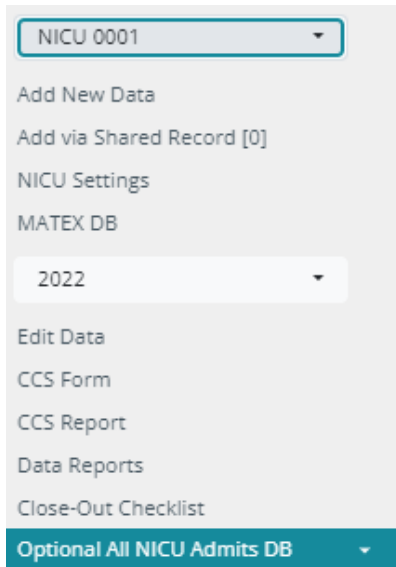

After successfully logging on to the NICU Data website (cpqccdata.org), the ANAD data entry user interface (UI) is accessed through the link labeled Optional NICU Admits DB in the left sidebar, typically located under the link for the close-out check list.

Note that your sidebar might be different depending upon the number of NICUs you have access to and/or whether your NICU has opted to participate in the MATEX data collection.

The year selected in the sidebar is used to determine the active year.

The ANAD can be accessed by birth year or by admission year, after clicking on the Optional NICU Admits DB link in the sidebar, the user may decide to access the ANAD by birth year or by admission year. Once this choice is made, the ANAD User Interface (UI) is loaded.

If the ANAD was never used or had never any records added for the selected year of birth or admission, the ANAD table is loaded without any records.
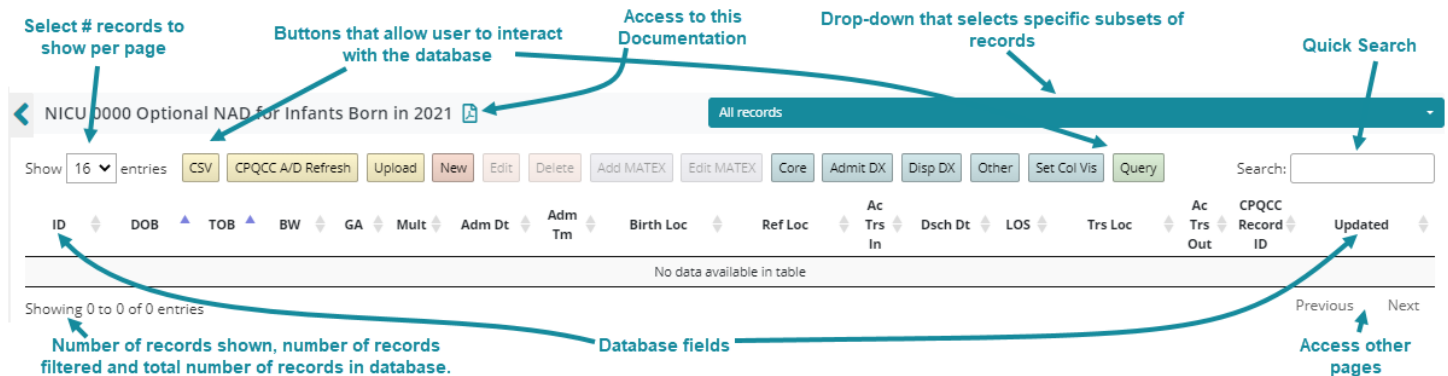
ANAD Records can be added or modified in 3 ways:

- Using the on-line form to add, edit or delete ANAD records.
- Uploading a CSV file by clicking on the Upload button.
- Adding existing CPQCC NICU A/D Records by clicking on the CPQCC A/D Refresh button.

Each of these options is explained in the following sections.

3.1   Using the On-Line Form

3.1.1   Adding New ANAD Records

Clicking on New, an empty ANAD data entry form overlays over the main ANAD Table (Figure 1). A tab setup at the top of the form divides the data entry form into a section for Demographics, Admission, ABX/Central Lines and Disposition.

As data are entered, fields that are not applicable based on what was entered by the user are removed from the form. Additional field information might be shown. For instance, upon entry of birth date and mother's birth date, the maternal age at birth of her baby is displayed under the mother's birth date field.

Figure 1: ANAD Data Entry Form

The user has several options how to assign an infant reference number (ID):

- Entry of a reference number in the input box.

- Checking the box 'Without Prefix' to have the intake system generate as reference number the next available sequential number. For instance, if the user has entered 1, 2, 3 already, the number 4 will be used.

- Checking the box 'Prefixed by birth year' to have the intake system generate as reference number the next available sequential number prefixed by the 4-digit birth year of the infant. The number will always use 4 positions. For instance, 20210001, 20210002, 20210003 will be followed by 20210004.

- Checking the box 'Prefixed by admit year' to have the intake system generate as reference number the next available sequential number prefixed by the 4-digit admission year.

- Checking the box 'Prefixed by 2-digit birth year' to have the intake system generate as reference number the next available sequential number prefixed by the 2-digit birth year of the infant. The number will always use 4 positions. For instance, 210001, 210002, 210003 will be followed by 210004.

- Checking the box 'Prefixed by 2-digit admit year' to have the intake system generate as reference number the next available sequential number prefixed by the 2-digit admission year.

Note that the next sequential number might be a skipped number. For instance, if the reference numbers 210001, 210002, 210004, 210005 have been used the next available sequential number is 210003.

Radio boxes can be reset to no option checked by clicking on the ⊖ symbol that appears next to the radio box label.

Upon tabbing to or clicking on a date or time field a date or time "picker" is available for use (Figure 2).

For the **date picker**, the months and year in the top area of the box are both drop-downs that show all month and year options available for the item. It is fastest to pick the month from the drop-down, then the year and then the day. Clicking on the day populates the associated input box. **Click anywhere outside the "picker" to close it.**

For the **time picker**, click on the hour, then minute. Clicking on either populates the associated input box. **Click anywhere outside the "picker" to close it.**

Figure 2: Date and Time Picker
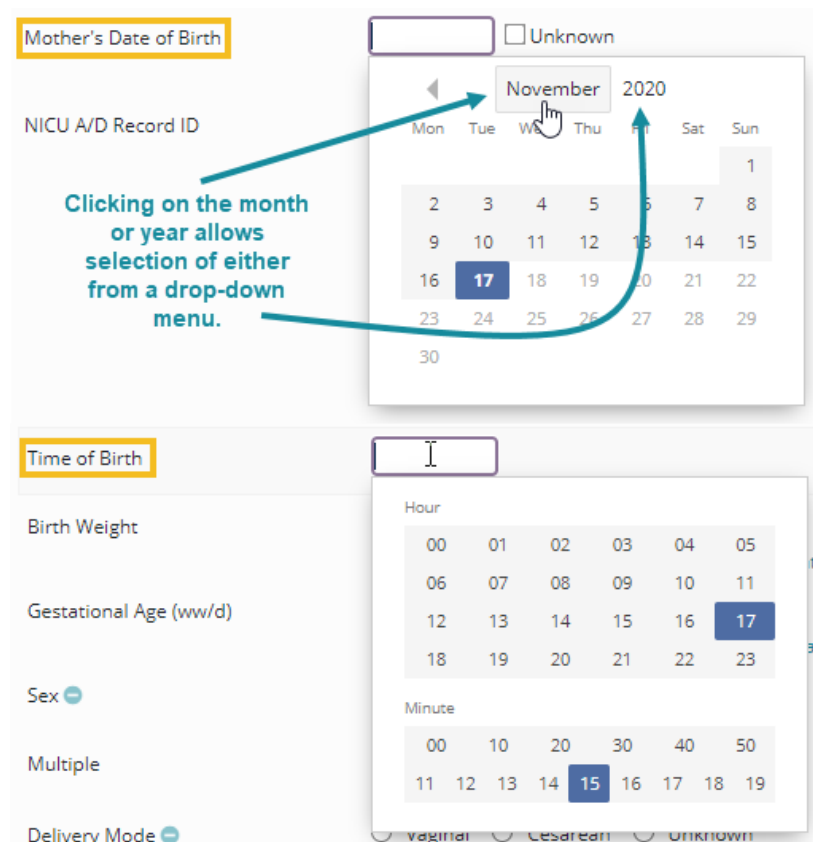
The date and time pickers do not have to be used, dates and times can also be entered in any acceptable format described for these fields in section 2.

Birth date and admission date must be entered, however, for mother's birth date, it is possible to enter UNK into the input field indicating that the mother's birth date is not known.

The default date for the date picker is the current date.

Tabbing away from a date or time field or clicking anywhere on the form besides the "picker" closes the date or time "picker" pop-up.

> To create a new ANAD record, at a minimum birth date, admission date and the reference number section must be provided.

When the user clicks on Create in the bottom right corner, an attempt to save the record is made. At that point, the record is checked for errors. If any errors are found, they are displayed to the user in the gray are at the bottom to the left of the Cancel and Create buttons.

Unable to update record. Need infant date of birth and admission date. Cancel | Create

Only if all errors are addressed, a record is saved.

Once a record is successfully created, the overlay closes, and the main ANAD table is immediately updated to reflect the newly created record. Note though that if you have any active filtering rules, and if your new record does not meet the criteria of these rules, you might not see the new record in the table (see Section 7).

ID	DOB	TOB	BW	GA	Mult	Adm Dt	Adm Tm	Birth Loc	Ref Loc	Ac Trs In	Dsch Dt	LOS	Trs Loc	Ac Trs Out	CPQCC Record ID	Updated
1	11-03-20	00:10	2,300	38/6	S	11-03-20	00:39				11-08-20	6				11-17-20 17:30

Showing 1 to 1 of 1 entries

3.1.2 Editing Existing ANAD Records

A record can be edited either by double clicking on the record's row or by clicking on the record once (it will appear highlighted in darker gray as shown below) and clicking on the Edit button above the ANAD table.

ID	DOB	TOB	BW	GA	Mult	Adm Dt	Adm Tm	Birth Loc	Ref Loc	Ac Trs In	Dsch Dt	LOS	Trs Loc	Ac Trs Out	CPQCC Record ID	Updated
20200020	01-28-2020	12:26	3,857	38/1	S	01-28-2020	12:43				01-30-2020	3				12-02-20 13:32
20200021	01-29-2020	21:47	2,702	37/2	2A	01-30-2020	03:51		ED		02-02-2020	4				12-02-20 13:32
20200022	01-29-2020	22:54	3,534	37/4	S	01-30-2020					02-01-2020	3				12-02-20 13:32
20200002	01-01-2020	14:00	2,402	34/0	S	02-23-2020		DEMO CNTR 3	PICU	No	03-01-2020	8				12-02-20 13:30
20200003	01-02-2020	11:59	2,052	33/1	2B	01-02-2020	12:26				01-19-2020	18				11-25-20 16:52
20200004	01-03-2020	23:41	2,377	31/0	S	01-03-2020	23:47				02-03-2020	32				11-25-20 16:52
20200005	01-03-2020	18:39	4,522	41/1	S	01-04-2020	00:51		ED		01-07-2020	4				11-25-20 16:52
20200007	01-08-2020	22:52	2,202	33/2	S	01-08-2020	22:52				01-21-2020	14				11-25-20 16:52
20200008	01-09-2020	11:52	3,412	38/0	S	01-09-2020	12:16				01-10-2020	2				11-25-20 16:52
20200009	01-09-2020	07:41	2,282	34/5	S	01-09-2020	07:55				01-19-2020	11				11-25-20 16:52
20200010	01-10-2020	10:04	3,702	40/0	S	01-11-2020	09:01	DEMO CNTR 3		Yes	01-15-2020	5				11-25-20 16:52
20200011	01-10-2020	10:04	3,702	40/0	S	01-17-2020		DEMO CNTR 3		No	02-21-2020	36				11-25-20 16:52
20200012	01-12-2020	05:34	4,247	UNK	S	01-12-2020	05:56				01-14-2020	3				11-25-20 16:52
20200013	01-13-2020	20:07	3,932	39/6	S	01-18-2020	22:30	DEMO CNTR 3		Yes	01-20-2020	3				11-25-20 16:52
20200014	01-15-2020	21:49	2,287	36/1	S	01-15-2020	22:07				02-04-2020	21				11-25-20 16:52
20200015	01-16-2020	13:06	3,817	40/0	S	01-16-2020	13:36				01-20-2020	5				11-25-20 16:52

Showing 1 to 16 of 38 entries   1 row selected   Previous 1 2 3 Next

3.1.3 Deleting ANAD Records

A record can be deleted by clicking on the record's row once and then clicking on the Delete button above the ANAD table. It is also possible to delete multiple records, in this case use the usual Shift+Click to select a range of records or CTRL+Click to extend the selection one at a time. Once all records are marked for deletion, click the Delete button to remove all records highlighted.

ID	DOB	TOB	BW	GA	Mult	Adm Dt	Adm Tm	Birth Loc	Ref Loc	Ac Trs In	Dsch Dt	LOS	Trs Loc	Ac Trs Out	CPQCC Record ID	Updated
20200005	01-03-20	18:39	4,522	41/1	S	01-04-20	00:51		ED		01-07-20	4				11-16-20 10:51
20200007	01-08-20	22:52	2,202	33/2	S	01-08-20	22:52				01-21-20	14				11-16-20 18:29
20200008	01-09-20	11:52	3,412	38/0	S	01-09-20	12:16				01-10-20	2				11-16-20 10:51
20200009	01-09-20	07:41	2,282	34/5	S	01-09-20	07:55				01-19-20	11				11-16-20 10:51
20200010	01-10-20	10:04	3,702	40/0	S	01-11-20	09:01	DEMO CNTR 3		Yes	01-15-20	5				11-16-20 10:51
20200011	01-10-20	10:04	3,702	40/0	S	01-17-20		DEMO CNTR 3		No	02-21-20	36				11-16-20 10:51
20200012	01-12-20	05:34	4,247	41/4	S	01-12-20	05:56				01-14-20	3				11-16-20 10:51
20200013	01-13-20	20:07	3,932	39/6	S	01-18-20	22:30	DEMO CNTR 3		Yes	01-20-20	3				11-16-20 10:51
20200014	01-15-20	21:49	2,287	36/1	S	01-15-20	22:07				02-04-20	21				11-16-20 10:51
20200015	01-16-20	13:06	3,817	40/0	S	01-16-20	13:36				01-20-20	5				11-16-20 18:29

Any deletion must be confirmed as shown below.

Note that to remove an infant and all his/her re-admissions entirely, the first record and all re-admission records must be selected. It is possible to remove re-admissions only.

3.1.4   Adding a Readmission for an Infant Already Present in the ANAD

1. To add a readmission (ID) for an infant that already has a (base) record in the ANAD, look up the infant's reference number (ID) pertaining to the first stay the infant had in your NICU.
2. Click on New to start a new record.
3. Enter the reference number from step 1 in the reference number field.
4. Enter the readmission index, i.e., for the first readmission to your NICU use 1, for the second readmission to your NICU, use 2, etc.

   Once data has been entered for the readmission index, all infant level fields are hidden from the form as this information has already been entered. Compare the figure below to Figure 1, and you will notice that all but one field have disappeared from the Demographics tab.

5. Fill out the remaining fields.
6. Click on Create.

The result of creating a new record as a readmission is shown below. The infant level information was retrieved based on the first (base) admission. The ID column shows the base admission's reference number concatenated with the re-admission counter. This display allows the grouping together of admissions pertaining to the same infant.

ID ▲	DOB	TOB	BW	GA	Mult	Adm Dt	Adm Tm	Birth Loc	Ref Loc	Ac Trs In	Dsch Dt	LOS	Trs Loc	Ac Trs Out	CPQCC Record ID	Updated
20200005	01-03-20	18:39	4,522	41/1	S	01-04-20	00:51		ED		01-07-20	4				11-16-20 10:51
20200005.1	01-03-20	18:39	4,522	41/1	S	01-20-20	08:20		PEDS	No	01-31-20	12				11-18-20 08:21

Showing 1 to 2 of 2 entries (filtered from 35 total entries)   Previous   1   Next

3.2   Uploading a CSV File with All NICU Admissions

[Upload] It is possible to upload a CSV file that meets the data entry requirements outlined in Section 2.

The CSV file may contain admissions to infants born in 2016 or later. Multiple admission years and multiple birth years are possible, and if the minimum **field** requirements are met (see bullet 3 below), records for all years included in the CSV file are added.

The following rules have been implemented for the upload of a CSV (comma separated variables) file:

1. The CSV file must be named `NICUDBxxxx.CSV` where `xxxx` refers to the 4-digit CPQCC network ID number of the NICU.

2. The first line of the CSV file must identify the field names, and the field names shown in Section 2 must be used. However, the <u>order of the fields does not matter</u>. If additional fields are included in the CSV file, they are ignored.

3. The following fields must be included in the CSV files: [`refnum`] or [`id`], [`bdate`], [`btime`], [`bwgt`], [`gestage`], [`adate`], [`atype`], [`acutetrsin`], [`ddate`], [`disp`], [`acutetrsout`], [`cpqccid`]. Note that <u>not</u> all these fields must have values for a record to be processed.

4. If the [`hospno`] field is not included, it is inferred based on the name of the CSV file.

5. Records are rejected if the reference number [`refnum`] or [`id`], birth date [`bdate`] or admission date [`adate`] cannot be populated from the CSV file, or if the year of birth precedes 2016.

6. There should be one row (record) for each NICU admission.

7. Records are rejected if the [`readmit`] field is submitted as an integer, yet no "base" admission for the infant is present either in the CSV file or among the ANAD records previously entered.

8. If the CSV file includes [`refnum`],[`readmit`] / [`id`] fields with values already present in the ANAD, the existing record is replaced with the data in the CSV file.

9. Starting with October 2022, if a CSV file includes any ICD-10-CM admission diagnosis fields with the prefix [`icd_adx`] followed by a number starting with 1 (e.g., [`icd_adx1`], [`icd_adx2`], [`icd_adx3`], etc.) and if no admission reasons are coded, the ICD-10-CM codes are mapped to the ANAD admit reasons ([`adx0`]-[`adx16`]).

10. Starting with October 2022, if a CSV file includes any ICD-10-CM discharge diagnosis fields with the prefix [`icd_ddx`] followed by a number starting with 1 (e.g., [`icd_ddx1`], [`icd_ddx2`], [`icd_ddx3`], etc.) and if no problems at discharge are coded, the ICD-10-CM codes are mapped to the ANAD problems at discharge ([`ddx0`]-[`ddx13`],[`ddx16`]).

An EDS upload is initiated by clicking on the Upload button.

The user is prompted to select the prepared CSV file:

Upload and Process NICU Admissions CSV File

NICU Admissions CSV files may be uploaded and processed one at a time.

Choose File | No file chosen

Upload File   Cancel

Clicking on Choose File brings up your computer's file selection box that can be used to select the file from wherever it is located on your computer or network.
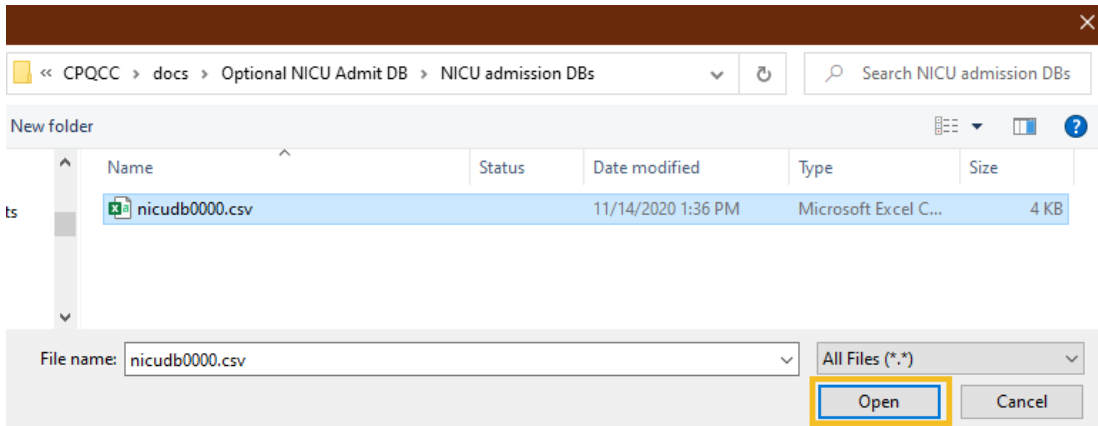
Once selected, the name of the selected file is shown in the upload overlay, and the Upload File button is enabled.

Upload and Process NICU Admissions CSV File

NICU Admissions CSV files may be uploaded and processed one at a time.

Choose File | nicudb0000.csv

Upload File   Cancel

Click on Upload File to upload your data file

If the Upload File button does not become active after a file is selected, verify that the file name is correct. Clicking on Upload File starts the file upload processing to add the records in the CSV file to the ANAD for your NICU.

Once the upload has been completed, a message is displayed summarizing the number of records uploaded. If any records could not be uploaded, this information is displayed as well.

Verify that all records were uploaded as intended.

Your CSV file was successfully processed.

21 records uploaded.

Close

Note that only records for the year selected are shown, therefore, to review data for other years included in the CSV file, make sure to review the ANAD for these other years.

Note that any active Search Filters or Query settings are applied. Clear all filters and Queries to see all records uploaded for the selected birth / admission year.

Starting with October 2022, if the CSV file includes any ICD-10-CM admission or discharge diagnosis codes, such codes – unless the target fields are already coded in the existing ANAD, or the CSV file uploaded – are mapped to the admit

ICD-10   reasons and problems at discharge ANAD fields. In this case the upload message provides information on the number of records for which a mapping was performed.

Your CSV file was successfully processed.

2 records uploaded.

Admission reasons and/or problems at discharge assigned for 2 records based on ICD-10.

Close

After an upload of a CSV file with successful mapping of ICD-10 codes, a button labeled ICD-10 is added to the yellow button group above the ANAD table. Clicking on this button displays a page that allows the verification of the ICD-10-CM mapping for the most recent CSV file uploaded.

An example for the mapping of ICD-10-CM to the ANAD admission reason/problems at discharge fields is shown in Figure 3. For each NICU admission with mapped diagnoses, a section with any admission diagnoses (1) and discharge diagnoses (2) is shown. Each row pertains to an ICD-10-CM diagnosis and the mapped admission reason or problem at discharge (3). The mapped admit reason/problem at discharge is provided as a description with the suffix of the [adx] or [ddx] field coded as "Present" in parentheses. The Edit button (4) provides access to the full ANAD record in case the user would like to modify it. If the ANAD record is edited, a check mark appears in the Edited column (5). Finally, the user may download a copy of all mappings as a PDF (6).

To get back to the NICU Admit DB table, please use the sidebar link!
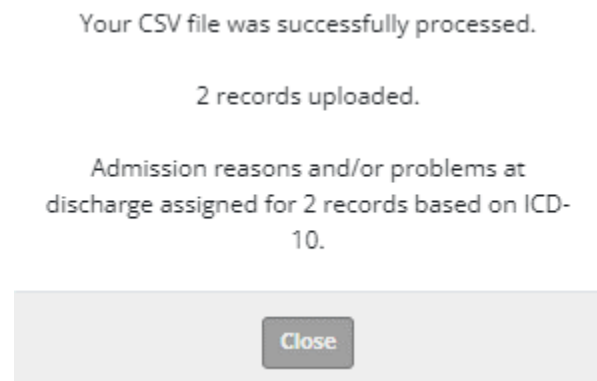
While we attempted to map most relevant ICD-10-CM codes, it is quite possible that our mapping is incomplete. For instance, you might find that one ICD-10-CM code should map to multiple admit reasons/problems at discharge. Or you might find that a code is not mapped at all where you think a mapping is appropriate.

Please do not hesitate to contact the Help Desk with requests for changes in the mapping.

The complete mapping rules are available upon request.

Figure 3: Review of ICD-10-CM to ANAD Admission Reasons/Problems at Discharge Mapping

Review ICD-10 to NAD Admit Reason and/or Problems at Discharge Mapping for most recent EDS Upload for NICU 0000 📄 📄   **6** [Click to download as PDF]

Click to Edit ID	Admit/Discharge	ICD-10 DX	ICD-10 DX Description	NAD Mapping	Edited
1	Admit Reason	Q210	Ventricular septal defect	Cardiac (12)	
	Admit Reason	P0737	Preterm newborn, gestational age 34 completed weeks	BW/GA (6)	
	Admit Reason	Q238	Other congenital malformations of aortic and mitral valves	Cardiac (12)	
	Admit Reason	Q909	Down syndrome, unspecified	Dysmorphic/chromosomal anomaly (10)	
	Admit Reason	J9690	Respiratory failure, unspecified, unspecified whether with hypoxia or hypercapnia	Respiratory (1)	
	Admit Reason	I5022	Chronic systolic (congestive) heart failure	Cardiac (12)	**3**
4	Problem at Discharge	Z3801	Single liveborn infant, delivered by cesarean	Not Mapped	**5**
	Problem at Discharge	P285	Respiratory failure of newborn	Respiratory (1)	
[Edit 20220003]	Problem at Discharge	P610	Transient neonatal thrombocytopenia	Not Mapped	
	Problem at Discharge	Q210	Ventricular septal defect	Cardiac (12)	
	Problem at Discharge	Q250	Patent ductus arteriosus	Cardiac (12)	
	Problem at Discharge	P722	Other transitory neonatal disorders of thyroid function, not elsewhere classified	Not Mapped	
	Problem at Discharge	P290	Neonatal cardiac failure	Cardiac (12)	
	Problem at Discharge	Q238	Other congenital malformations of aortic and mitral valves	Cardiac (12)	
2	Problem at Discharge	P611	Polycythemia neonatorum	Not Mapped	
	Problem at Discharge	P0737	Preterm newborn, gestational age 34 completed weeks	BW/GA (6)	
	Problem at Discharge	P704	Other neonatal hypoglycemia	Hypoglycemia (2)	
	Problem at Discharge	Q909	Down syndrome, unspecified	Dysmorphic/chromosomal anomaly (10)	
	Problem at Discharge	P0717	Other low birth weight newborn, 1750-1999 grams	BW/GA (6)	
	Problem at Discharge	Z20822	Contact with and (suspected) exposure to COVID-19	Not Mapped	

To prevent overwriting admit reasons and/or problems at discharge already coded in the Optional NICU Admits DB, any ICD-10-CM admission diagnosis codes in the CSV file are ignored if admit reasons are already present and any ICD-10-CM discharge diagnosis codes in the CSV file are ignored if problems at discharge are already present. The following hierarchy applies:

1. Admission reasons coded in CSV file. *Any admission reason coded in the CSV file will always be used in the ANAD record.*

2. Existing admission reasons already coded in the ANAD record. *If the CSV file includes ICD-10-CM admission diagnosis codes, but no admit reasons, and an existing ANAD record already has admission reasons coded, these admission reasons will **not** be replaced by ICD-10 based admission reasons.*

3. Admission reasons mapped from ICD-10-CM codes.

1. Problems at discharge coded in CSV file. *Any problem at discharge coded in the CSV file will always be used in the ANAD record.*

2. Existing problems at discharge already coded in the ANAD record. *If the CSV file includes ICD-10-CM discharge diagnosis codes, but no problems at discharge, and an existing ANAD record already has problems at discharge coded, these problems at discharge will **not** be replaced by ICD-10 based problems at discharge.*

3. Problems at discharge mapped from ICD-10-CM codes.

3.3 Adding CPQCC NICU A/D Records to the All NICU Admits Database

CPQCC A/D Refresh

It is possible to update the ANAD with records from the CPQCC NICU A/D database. Furthermore, it is possible to ensure that records in the ANAD that pertain to a higher acuity infant with a CPQCC NICU A/D record id are correctly identified. To add CPQCC NICU A/D records, or to add/validate the NICU A/D record ID, or to update ANAD records linked to a CPQCC NICU A/D records through the [`cpqccid`] field, click on the CPQCC A/D Refresh button.

The CPQCC A/D Refresh button is disabled if any inconsistency exists relating to the NICU A/D Record ID for an ANAD record. Please review Section discussing the ANAD Inconsistency Check.

Clicking on the CPQCC A/D Refresh button brings up the pop-up below.

Figure 4: Importing CPQCC NICU A/D Records into the All NICU Admits Database

Retrieve new records from the CPQCC A/D database and/or update All NICU Admits DB records with a CPQCC ID

Existing All NICU Admits DB records with a CPQCC ID will have all infant level variables and *pending stay level* variables related to discharge updated to match the CPQCC A/D form: birth date, birth time, birth weight, gestational age, multiple status, sex, delivery mode, mother's birth date, mother's race, mother's Hispanic origin, *disposition, acute transport out, discharge date, transport location.*

- ◉ For new records, use the CPQCC NICU A/D record ID as reference number / ID for the All NICU Admits DB stay.

- ◯ For new records, use the next available sequential reference number(s) as reference number / ID for the All NICU Admits DB stay.

- ◯ For new records, use the next available sequential reference number(s) as reference number / ID prefixed by the admission year for the All NICU Admits DB stay. This will result in: **YYYY0001, YYYY0002, ...** where YYYY is the admission year.

- ◯ For new records, use the next available sequential reference number(s) prefixed by the birth year. This will result in: **YYYY0001, YYYY0002, ...** where YYYY is the birth year.

- ◯ For new records, use the next available sequential reference number(s) as reference number / ID prefixed by the 2-digit admission year for the All NICU Admits DB stay. This will result in: **YY0001, YY0002, ...** where YY is the 2-digit admission year.

- ◯ For new records, use the next available sequential reference number(s) prefixed by the 2-digit birth year. This will result in: **YY0001, YY0002, ...** where YY is the 2-digit birth year.

- ◯ Do <u>not</u> import new records, only update existing records.

- ◯ Add higher acuity indicator (CPQCC A/D Record ID) to existing All NICU Admits DB Records based on birth date, birth time, admission date, infant sex, multiple, birth weight and gestational age. Only update one field (CPQCC A/D Record ID) for existing records with missing or invalid CPQCC A/D Record ID! *Check boxes below are ignored for this option!*

- ☑ Check to only include CPQCC NICU A/D records with all All NICU Admits DB items coded.

- ☐ Check to map CPQCC NICU A/D conditions to All NICU Admits DB problems at discharge for new <u>and</u> existing All NICU Admits DB records.

- ☐ Check to map CPQCC NICU A/D conditions to All NICU Admits DB problems at discharge for new records only.

Yes, Confirm   No, Close

You may choose how to deal with assigning reference/id numbers for newly imported records. The default is to use the CPQCC NICU A/D record ID. The alternative option is to assign the next available sequential numbers available in accordance with the user adopted scheme.

The user may also specify how to deal with CPQCC NICU A/D records that are pending for some of the fields that can propagate to the ANAD. This choice is important as only when a CPQCC NICU A/D record is imported for the first time <u>all possible fields are populated</u>. While existing ANAD records that are connected to a CPQCC NICU A/D record through [`cpqccid`] field can be updated by a CPQCC NICU A/D refresh, these <u>refreshes of existing ANAD records are restricted to</u>

infant level fields only and fields related to disposition if they are not currently pending in the ANAD (see bullet 5 in the list below). In August 2022, another restriction was placed on importing disposition fields: Disposition items are only imported if the date of disposition implied by the NICU A/D record is after the coded ANAD admission date.

To support the population of NICU problems at discharge, the CPQCC data center has developed a cross walk of conditions coded on the NICU A/D form and the Optional NICU Admits problems at discharge. The bottom two import options allow the user to capture problems at discharge based on this crosswalk either for all records or for new records only. Crosswalk details can be reviewed in Section 11.16.

Just in case, something goes wrong, it is recommended to back up your ANAD prior to importing CPQCC records (i.e., downloading your current database using the CSV button, see Section 0.

It is important to be aware of several caveats when importing CPQCC NICU A/D records into the ANAD:

1. The [refnum] field is set based on the user option indicated (see Figure 4).
2. Any CPQCC NICU A/D record for the selected birth / admit year is included in the import.
3. A CPQCC NICU A/D record results in a new ANAD record if the [cpqccid] field in the ANAD is never equal to the CPQCC NICU A/D record ID.
4. A **new** ANAD record has the following fields populated based on the CPQCC NICU A/D record:
   [refnum], [readmit], [hospno], [bdate], [btime], [bwgt], [gestage], [multiple], [sex], [delmode], [mdate], [mrace], [mhisp], [adate], [atype], [acutetrsin], [admtnotes], [birthlocation], [reflocation], [ddate], [disp], [acutetrsout], [xferlocation], [cpqccid]. If the user checked the option to have problems at discharge captured from the NICU A/D form, the fields [ddxX] fields are populated as well.
5. Any **existing** ANAD records that are linked to a CPQCC NICU A/D records have infant level fields overwritten. These fields are:
   [bdate], [btime], [bwgt], [gestage], [multiple], [sex], [delmode], [mdate], [mrace], [mhisp].
   Fields related to discharge [disp]. [acutetrsout], [xferlocation], [ddate], are only updated if they are pending (not coded) in the ANAD and the discharge date implied by the NICU A/D record is after the ANAD admission date. All other stay dependent fields are not updated.
6. [adate] is imported as [bdate] + [DAYADMISS] − 1.
7. [atype] is imported as follows:
   - Inborn infants admitted on the day of birth are imported as [atype]=0.
   - Inborn infants admitted one or more days after the day of birth are imported as [atype]=1.
   - Infants born at the co-located hospital (for satellite NICUs only) are imported as [atype]=2.
   - Outborn infants who were never home are imported as [atype]=3.
   - Outborn infants who were previously home, but never at this NICU are imported as [atype]=4.
   - Outborn infants who were previously home and are re-admitted as acute transport-in are imported as [atype]=131.
   - Outborn infants who were previously home and are re-admitted to this NICU are imported as [atype]=14
8. [ddate] (NICU discharge date) is imported a [adate] + [LOS1] − 1.
   Note that the import of the NICU discharge date based on the CPQCC initial length of stay is problematic as the infant might not have been discharged directly from the NICU, but rather from another unit within the NICU's hospital where the infant stayed after NICU care was no longer needed. For additional details, see the discussion of Episode of Care in Section 1.3.
9. [acutetrsin] (acute admission to your NICU) is imported as 1 if a CPeTS form is associated with the CPQCC NICU A/D record, or if an infant is admitted from home.

Beware that not all acute admissions have a CPeTS form, therefore, updates to the imported value might be needed. If an infant was transferred to the NICU from another unit within your hospital, this item might have to be corrected.

10. [acutetrsout] is imported as 1 if the CPQCC NICU A/D record reason for transport is one of ECMO, Medical/Diagnostic services, Surgery, Other.

11. [disp] (NICU disposition) is imported as follows:

   ▪ Infants initially discharged home are imported as [disp]=1.

   ▪ Infants with initial disposition death are imported as [disp]=3. These infants might have to have their disposition corrected if death occurred after transfer to another unit in the NICU hospital.

   ▪ Infants with initial disposition "still in-house at age 1 year" do not have a disposition imported. For these infants CPQCCSIH is suffixed to the [admtnotes] field.

   ▪ Infants initially transported-out and with disposition after transport of home or death are imported as [disp]=2.

   ▪ Infants initially transported-out and with disposition after transport of transported back are imported as [disp]=2.
   For these infants, the [admtnotes] field is suffixed with NEEDREADMIT, and a readmission record should be added to the ANAD (see Section 3.1.4). Once verification has happened, NEEDREADMIT should be removed from the [admtnotes] field.

   ▪ Infants initially transported-out and with disposition after transport of transported again to another hospital are imported as [disp]=2.
   For these infants, the [admtnotes] field is suffixed with READMIT???, and it should be verified that the infant did not have a re-admission at this NICU. Once verification has happened, READMIT??? should be removed from the [admtnotes] field.

12. Any infants who were admitted to the NICU at age older than 28 days and any other NICU admissions of non-CPQCC eligible infants must be added to the ANAD ensure the complete entry of all NICU admissions.

Note that most CPQCC records can be imported without any further action needed, however, to ensure that data for the CCS form can be correctly captured, the import should be carefully reviewed for the caveats pointed out in this section.

Table 2: CPQCC NICU A/D Record Import Checklist

☐	Determine the method for generation of the reference number [refnum].
☐	Add infants admitted to NICU at > 28 days and non-CPQCC eligible infants since they are not captured with a CPQCC NICU A/D form.
☐	Review imported data for instances in which the [admtnotes] field is NEEDREADMIT. These are infants who are transported from your NICU to another hospital and transported back to you. As the ANAD requires a data row for each infant stay, another row of data should be added for these infants. Follow the instructions in Section 3.1.4.
☐	Review imported data for instances in which the [admtnotes] field is READMIT???. These are infants who were transported out from your NICU and then transported again. The CPQCC NICU A/D database does not capture whether these infants ever returned to your NICU. If they did, a stay should be added. If they did not, READMIT??? should be removed from the [admtnotes] field to indicate that review was completed.

☐	Review imported data for instances in which the [`admtnotes`] field is `CPQCCSIH`. These are infants that were still hospitalized on their first birthday. Per the CPQCC NICU A/D record, no discharge date or disposition is imported, i.e., this information must be added to the NICU Admission DB manually.
☐	Ensure that infants who transferred from your NICU to another unit within your hospital have the correct NICU disposition and NICU discharge date coded. This step is important since the CPQCC NICU A/D form requires: a) that CPQCC members report the infant's disposition from your hospital as Home, Transported, SIH or death even if the infant was not discharged directly from your NICU, and b) the CCS form requires the reporting of the total number of NICU days for al NICU admissions.
☐	If an infant transferred to another unit within your hospital and then is discharged home or transported from that unit, the NICU disposition should be changed to 'transferred to another unit in my hospital,' the NICU discharge date should be corrected to the date on which this transfer occurred, and the imported disposition information should be coded as hospital disposition and hospital disposition date.
☐	Ensure that outborn infants that are transferred to your NICU from another unit within your hospital are correctly coded as acute and non-acute admissions. The import default is to consider such infants acute admissions.
☐	Check infants who were born in the prior year and discharged in the import year and make sure all of them have a date of disposition and disposition coded. To do so, load the ANAD by admission year and sort the discharge date column in ascending order. All infants without a discharge date will appear at the top.

Figure 4 also includes the option to add the higher acuity indicator (`cpqccid`) <u>only</u> to the ANAD. This option was added to allow members to more easily verify whether any of the ANAD records entered pertained to higher acuity infants and add the higher acuity indicator.

> Prior to importing CPQCC NICU A/D records, we recommend running a CPQCC A/D Refresh with the option "Add higher acuity indicator (CPQCC A/D Record ID) to existing All NICU Admits DB Records based on birth date, birth time, admission date, infant sex, multiple, birth weight and gestational age. Only update one field (CPQCC A/D Record ID) for existing records with missing or invalid CPQCC A/D Record ID!" Doing so ensures that the import of CPQCC NICU A/D records will not lead to duplication in the ANAD.

4   ANAD Consistency Check

Starting with 2022, CPQCC is supporting the new CCS requirement of reporting problems at discharge for all NCICU admissions. Furthermore, CPQCC is investigating the route of linking the ANAD to HCAI Inpatient Discharge Data pertaining to the newborn record. Such a linkage – if successful – might replace the abstraction of problems at discharge with the use of ICD-10-CM diagnoses and procedures in a newborn's hospital discharge record.

After reviewing earlier years of the ANAD, we identified several inconsistencies that might cause trouble for the linkage

Consistency Check

task. Therefore, we decided to proactively add a consistency check that should prevent these issues if addressed by the user.

> **The Consistency Check button is disabled if your data has no inconsistencies.**

The following sections explain the inconsistencies flagged and provide strategies on how to best address them.

4.1   ANAD and NICU A/D Record differences

The birth date, birth weight and/or gestational age coded in the ANAD for a record linked to a NICU A/D record does not agree. Also marked are any instances where an ANAD admission date is prior to the NICU A/D date of birth.

This inconsistency might be introduced by at least 2 mechanisms.

- The NICU A/D Data Consistency Report (DCR) identifies an inconsistency of birth date, birth weight or gestational age that is then resolved by updating the NICU A/D record. This update though is not also done in the ANAD.
  To help address this issue, we have added an option to the CPQCC A/D Refresh: It is now possible to only refresh existing ANAD records that are linked a NICU A/D record. In other words, this update will never include new NICU A/D records. NICU members are encouraged to use this option to refresh the information in the ANAD whenever relevant fields in the NICU A/D records are updated.

- After finding that an infant does not meet eligibility criteria, the NICU A/D record is completely replaced with a different infant.
  This practice is discouraged by the data center. Instead for such a situation, the deleted flag should be set. However, if infant information is completely swapped out, it is important to update the NICU A/D Record ID in the ANAD.

Birth date coupled with birth weight and gestational age differences are considered critical. If such an issue is found for your NICU's ANAD and NICU A/D record, the CPQCC A/D refresh button is disabled, and you will not be able to refresh your ANAD based on NICU A/D records.

Possible Inconsistencies <u>for birth years 2022 or later</u> in Optional NAD for NICU [ ] 📄 📄   **Highlighted** IDs must be fixed before a CPQCC A/D Refresh can be done.

| Click to Edit ID	Tab	Field	Error Message					Status
Edit 183	Demographics	NICU A/D Record ID	The NICU A/D record ID is used for more than 1 infant. Verify that the NICU A/D record and NAD record pertain to the same infant.					
				NICU A/D Record 7523	NAD Record 183	Difference	NAD Record 151	
			Birth Date	03-24-2022	04-02-2022	9 days	03-24-2022	
			Birth Weight	3,255	995	2260 grams	3,255	
			Gestational Age	37/4	28/5	62 days	37/4	
			Please review and update the NICU A/D Record ID as needed. Contact the Help Desk if you need support.					

Critical issues also appear with a reddish Edit link, rather than a gray one. Please review all the information provided carefully. and decide on an action route. In our testing, we found it very useful to have several browser windows open to review other pertinent information while keeping the table with a list of inconsistencies available.

There are several possibilities for how these inconsistencies are listed, one example is shown above. In this case, it looks like ANAD record 183 should be linked to a different NICU A/D record as there is already another ANAD record linked to the NICU A/D record. You will need to look up the correct NICU A/D Record ID, then update the ANAD record.

From the example, you might understand why we consider this issue as critical. If we were to allow a refresh based on the NICU A/D record, the ANAD record would be populated with incorrect information!

If you have any trouble understanding the problem, please contact the Help Desk!

If only the birth date is different, but birth weight and gestational age agree, the issue is not considered critical, and the easiest way to address it is by running a CPQCC A/D Refresh for existing records only (example below).

Possible Inconsistencies <u>for birth years 2022 or later</u> in Optional NAD for NICU ▢ 📄 📄 Highlighted IDs must be fixed before a CPQCC A/D Refresh can be done

Click to Edit ID	Tab	Field	Error Message				Status
Edit 220109	Demographics	Birth Date	The birth date for the NAD record and associated NICU A/D record differ.				
				NICU A/D Record 1957	**NAD Record 220109**	**Difference**	
			Birth Date	01-11-2022	01-14-2022	3 days	
			Birth Weight	2,090	2,090		
			Gestational Age	33/6	33/6		
			Once you have confirmed that the two records pertain to the same infant, run a CPQCC A/D Refresh to make sure infant level data in your NAD match corresponding NICU A/D data.				

4.2   Invalid Admission Type for an ANAD Readmission

The admission type for a readmission, [`readmit`] coded as a number 1 or higher, is one of

0=Inborn never home immediately admitted to the NICU after birth;
1=Inborn never home admitted from another unit within my hospital;
2=Born at co-located hospital never home;
3=Outborn, admitted to this NICU from another hospital or non-hospital location or from a unit within my hospital;
4=Admitted from home or from another unit within my hospital after previous home discharge.

As the on-line form does not allow these options for readmissions, this inconsistency typically occurs for ANAD records that are uploaded through the CSV upload utility.

Starting with August 2022, if the value 4 is found as admission type for a readmission (based on the presence of a number in the [`readmit`] field), the value 4 is changed to 14 as part of the intake process. Such an automatic correction is not possible for the other options. These other options will lead to the admission type loading as pending when a form is opened.

The wording for this inconsistency is shown in the example below:

Possible Inconsistencies <u>for birth years 2022 or later</u> in Optional NAD for NICU ▢ 📄 📄 Highlighted IDs must be fixed before a CPQCC A/D Refresh can be done.

Click to Edit ID	Tab	Field	Error Message	Status
Edit 2022017.1	Admission	Admission Type	The admission type provided, **Outborn admitted from another hospital or non-hospital location or unit within my hospital (coded value: 3)** is not valid for an infant that previously stayed at your NICU and is readmitted. Please update the admission type.	
Edit 2022053.1	Admission	Admission Type	The admission type provided, **Outborn admitted from another hospital or non-hospital location or unit within my hospital (coded value: 3)** is not valid for an infant that previously stayed at your NICU and is readmitted. Please update the admission type.	

The link in the left column titled Click to Edit ID can be clicked on to open the ANAD data entry form. The record can then be edited and updated. After the update, the user returns to the inconsistency list. If the inconsistency was addressed the status column shows a big blue check mark:

Possible Inconsistencies for birth years 2022 or later in Optional NAD for NICU [ ] 📄 📊   `Highlighted` IDs must be fixed before a CPQCC A/D Refresh can be done

Click to Edit ID	Tab	Field	Error Message	Status
Edit 2022017.1	Admission	Admission Type	The admission type provided, **Outborn admitted from another hospital or non-hospital location or unit within my hospital (coded value: 3)** is not valid for an infant that previously stayed at your NICU and is readmitted. Please update the admission type.	✔
Edit 2022053.1	Admission	Admission Type	The admission type provided, **Outborn admitted from another hospital or non-hospital location or unit within my hospital (coded value: 3)** is not valid for an infant that previously stayed at your NICU and is readmitted. Please update the admission type.	

4.3   Missing Base Admit

A fundamental concept of the ANAD is the ability to add an infant that is admitted to your NICU for the first time as a base admit, and any subsequent readmissions such that they reference the base admission and the infant level information such as birth date, birth weight, sex, etc. captured. The way the ANAD programming is set up should not allow this issue to ever occur, and we have not found it in any past records. If you ever encounter this issue, please contact the CPQCC Help Desk.

4.4   Incorrect Base Admit Type

This issue is like the issue discussed in Section 4.2, but in this case the admission type entered should not be used for a base admission. Only if at least one readmission coded as [nnnn.x] is found, this issue is flagged. This issue is not considered critical and should be addressed using the strategy outlined in Section 4.2.

4.5   Duplication

As part of the preparations for the All NICU Admits Focusboard available on the NICU Reports website, any possible duplicate records are removed from the ANAD. However, such processing is not applied for the purpose of populating the CCS form based on the ANAD. Therefore, we decided to add this issue to the list of consistencies flagged.

Duplication is determined based on exact agreement of the following fields:

- Birth date
- Birth time
- Admission date
- Admission time
- Admission type
- Birth weight
- Multiple status

The inconsistency is shown as in the example below:

Possible Inconsistencies for birth years 2022 or later in Optional NAD for NICU [ ] 📄 📊   `Highlighted` IDs must be fixed before a CPQCC A/D Refresh can be done.

Click to Edit ID	Tab	Field	Error Message	Status
Edit 269	Demography / Admission	Possible Duplication	This following NAD records appear to be duplicates: **269 275**. The following fields all agree for these records: Birth date: [ ]-2022. Birth time: 21:34. Admit date: [ ]-2022. Admit time: 11:57. Admit type: Inborn never home admitted from another unit within my hospital. Birth weight: 3,290. Multiple: S. Please remove true duplicates from your NAD. If these records should stand as is and are not duplicates, please contact the Help Desk.	

If the two records pertain to different infants that were inadvertently coded with the same values, update the values in the ANAD record.

If the two records are duplicates, remove one of the two records by deleting it from the ANAD (see Section 3.1.3 for instructions how to delete records).

If one of the two records pertains to a readmission, it is best to also delete the record and start a new record referencing the existing non-deleted record as the base record.

This issue is not considered critical.

4.6   Overlapping Admissions

This flag indicates the situation that two admissions of the same infant have overlapping admission dates and discharge dates. Note that the inconsistency list shows both records involved in the overlap, but you will likely only have to fix one of the two records.

In this case, the infant was transported out to another hospital and transported back, requiring not only an update in discharge date, but also NICU disposition. In other words, with this issue, it might be necessary to also update other fields related to the disposition for this NICU stay.

After resolving the issue, the status column is updated for the record updated (see below), there is no need to update the other record. To ensure that the inconsistency is resolved, start the ANAD from the left sidebar. If the Inconsistency Check button is grayed out, there are no inconsistencies, otherwise, check the list to see whether the issue has disappeared.

This issue is not considered critical.

4.7   Date of Birth, Date of NICU Admission and Admission Type

For infants inborn and admitted to the NICU immediately after birth the date of birth and admission date should be the same date for most infants, or the admission date should be the date following the date of birth, e.g., if the infant was born just before midnight. This consistency check alerts to discrepancies between admission date and birth date greater than 1 day for inborn infants admitted to the NICU immediately following birth.

4.8   Other Inconsistencies

Of course, it is possible to come up with many other inconsistencies. The ones we have decided to list are important for the purpose of either CCS form population, data linkage or the NICU Reports All NICU Admits Focusboard.

If you think that other inconsistencies should be added since such flags would help in your workflow, please submit a Help Desk ticket, and let us know.

> To minimize possible data lock issues due to concurrent access by several users, the consistency check uses the bi-hourly backup of the NICU A/D Database.

5 All NICU Admits Database Download

5.1 Downloading All ANAD records

CSV

The ANAD can be downloaded at any time using the CSV button at the very left of the action menu of the ANAD UI.

Clicking on the CSV button uses the browser's way of downloading materials from the web. For instance, Google Chrome might add a note in the bottom left area that data were successfully downloaded along with a link to the downloaded file and download location.

> To download all records, make sure that you do not have an active query that restricts the records included in your table and that you do not have any table rows selected.

The downloaded file can be found in the location where your browser places downloaded materials. In Windows, the default location is the Downloads folder:
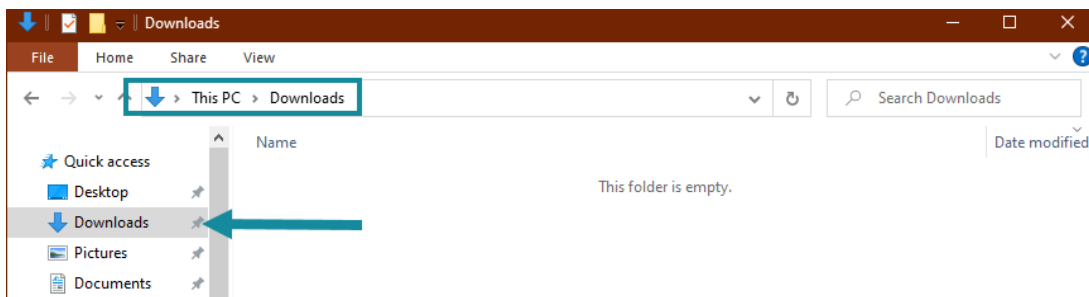
The downloaded file is named `NICUDBxxxx.CSV` where `xxxx` refers to the 4-digit CPQCC NICU Network ID.
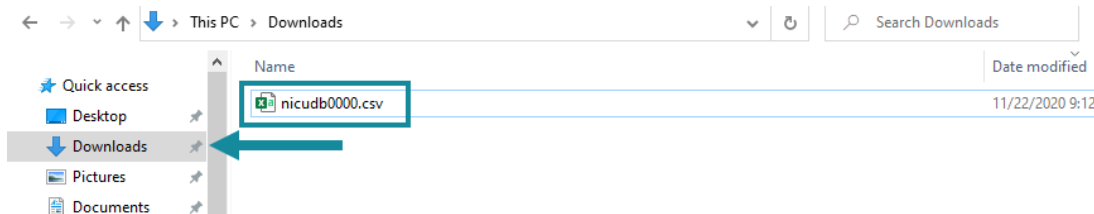
If a file with the name nicudbxxxx.csv already exists, the downloaded file is named `NICUDBxxxx (1).csv`, `NICUDBxxxx (2).csv`, etc. The file can be opened in Excel or a text editor.

Opening this file in a text editor such a notepad shows that this file meets the requirements of a CSV file that can be uploaded. In fact, this file can be uploaded as a CSV file through the upload interface!
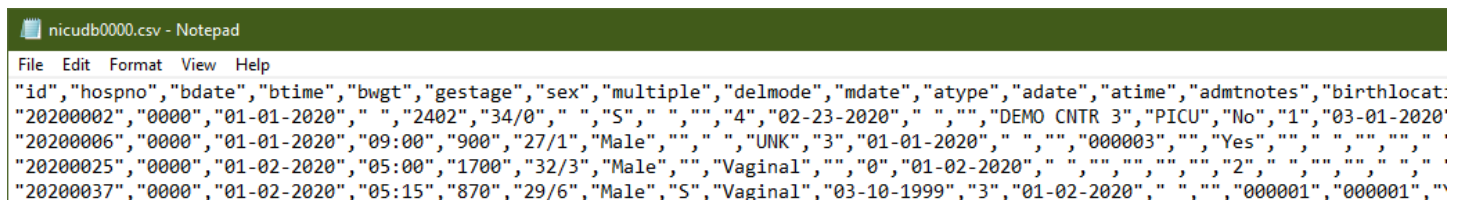
The downloaded file can also be opened and edited with Excel or a similar spreadsheet program.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	id	hospno	bdate	btime	bwgt	gestage	sex	multiple	delmode	mdate	atype	adate	atime	admtnotes	birthlocation	reflocation	acutetrsin	disp
2	20200002	0	1/1/2020		2402	34/0		S			4	2/23/2020			DEMO CNTR 3	PICU	No	1
3	20200006	0	1/1/2020	9:00	900	27/1	Male			UNK	3	1/1/2020			3		Yes	
4	20200025	0	1/2/2020	5:00	1700	32/3	Male		Vaginal		0	1/2/2020						2
5	20200037	0	1/2/2020	5:15	870	29/6	Male	S	Vaginal	3/10/1999	3	1/2/2020			1	1	Yes	3
6	20200033	0	1/2/2020	6:00	1601	32/1	Female	S	Vaginal	3/4/1989	3	1/4/2020			1		Yes	2
7	20200003	0	1/2/2020	11:59	2052	33/1		2B			0	1/2/2020	12:26					1
8	20200027	0	1/2/2020	13:56	1489	32/0	Male	2A	Vaginal	4/14/1981	3	1/4/2020			3	1	Yes	1

Note that this file includes the [id] field, i.e., a field that combines [refnum] and [readmit] into one field. This is an acceptable alternative specification and is supported by the file upload routine.

> If you need to make changes that are more easily accomplished in Excel (or alternative spreadsheet software) compared to the one-by-one record editing supported by the Web Data Entry UI, you can make these changes in Excel (or alternative) and upload the edited file. Make sure to not change the [id] ([refnum].[readmit]) field to ensure that upon upload your record is replaced.

5.2 Downloading a subset of records

You can download a subset of records by selecting specific records. Use CTRL+Click and Shift+Click to extend a selection as needed.

Furthermore, you can use the filtering and query tools provided to narrow the set of records downloaded. For instance, if you wish to only select infants with a birth weight of less than 1000 grams, you can use the Query tool to filter those records from the ANAD table. Any file downloaded with such a query active only includes those records that meet the query criteria.

6   ANAD Sorting and ANAD Views

The ANAD can be sorted by each of the columns shown in the table by clicking on the small triangles that appear next to each field name in the header row.

If the ANAD is accessed by birth year, the default sort order of the table is date of birth and time of birth. If the ANAD is accessed by admission year, the default sort order of the table is admission date and admission time.

Note that the ANAD UI is "state-saving," in other words, when you re-visit the ANAD within the state-save time-out (currently 2 hours) – even after logging off or turning off your computer – the sort order that was active at your last visit will be used as the default sort order (see Section 11.12).

Core   The default view of the ANAD includes all core variables. You can change the fields to see by clicking on any of the other 4 blue action buttons at the top of the ANAD table. The Admit DX and Disp DX buttons provide quick access to a view of admission reasons and discharge diagnoses, Other respectively. Clicking on Other changes the view to all other fields of the ANAD.

Show 16 ✔ entries CSV CPQCC A/D Refresh Upload New Edit Delete Add MATEX Edit MATEX **Core** Admit DX Disp DX Other Set Col Vis Query (1)

Search:

ID	DOB	TOB	BW	GA	Mult	Adm Dt	Adm Tm	Birth Loc	Ref Loc	Ac Trs In	Dsch Dt	LOS	Trs Loc	Ac Trs Out	CPQCC Record ID	Updated
20200002	01-01-2020		2,402	34/0	S	02-23-2020		DEMO CNTR 3	PICU	No	03-01-2020	8				03-04-20 06:55
20200003	01-02-2020	11:59	2,052	33/1	2B	01-02-2020	12:26				01-19-2020	18				11-20-20 13:16
20200004	01-03-2020	23:41	2,377	31/0	S	01-03-2020	23:47				02-03-2020	32				03-04-20 06:55
20200001	04-05-2020	04:05	2,010	34/2	S	04-07-2020		000003	000001	Yes	06-15-2020	70			1408	11-20-20 08:21

Showing 1 to 4 of 4 entries (filtered from 37 total entries)   Previous 1 Next

Show 16 ✔ entries CSV CPQCC A/D Refresh Upload New Edit Delete Add MATEX Edit MATEX Core **Admit DX** Disp DX Other Set Col Vis Query (1)

Search:

ID	A: Susp Infection	A: Resp Distress	A: Hypo glycemia	A: Hyperbili	A: Temp Instab	A: Feeding Diff	A: BW/GA	A: SGA	A: PTM	A: NAS	A: Cong Anomaly	A: Cyanotic Ev	A: Cardiac Ev	A: Seizure	A: TRS- In Ins	A: TRS- In Bed Av	A: Other
20200002						Yes											
20200003						Yes			Yes								
20200004							Yes										
20200001																	

Showing 1 to 4 of 4 entries (filtered from 37 total entries)   Previous 1 Next

Show 16 ✔ entries CSV CPQCC A/D Refresh Upload New Edit Delete Add MATEX Edit MATEX Core Admit DX **Disp DX** Other Set Col Vis Query (1)

Search:

ID	D: Susp Infection	D: Resp Distress	D: Hypo glycemia	D: Hyperbili	D: Temp Instab	D: Feeding Diff	D: BW/GA	D: SGA	D: PTM	D: NAS	D: Cong Anomaly	D: Cyanotic Ev	D: Cardiac Ev	D: Seizure	D: Other
20200002															
20200003				Yes		Yes	Yes								
20200004															
20200001															

Showing 1 to 4 of 4 entries (filtered from 37 total entries)   Previous 1 Next

Show 16 ✔ entries CSV CPQCC A/D Refresh Upload New Edit Delete Add MATEX Edit MATEX Core Admit DX Disp DX **Other** Set Col Vis Query (1)

Search:

ID	Sex	Del Mode	Mother's DOB	Admit Type	Admit Notes	Disp	Hsp Disp	Hsp Dsch Dt	ABX Days	CL Days	CLABSI	User ID for Update
20200002				Admitted from home or from another unit within my hospital after previous home discharge		Home from this NICU						HIS
20200003				Inborn never home immediately admitted to the NICU after birth		Home from this NICU						HIS
20200004				Inborn never home immediately admitted to the NICU after birth		Home from this NICU						HIS
20200001	Female	Vaginal	04-05-1987	Outborn admitted from another hospital or non-hospital location or unit within my hospital		Home from this NICU						HIS

Showing 1 to 4 of 4 entries (filtered from 37 total entries)   Previous 1 Next

Set Col Vis
The button Set Col Vis allows the user to set their own view. Clicking on this button brings up an overlay or pop-up with a button for each possible table field. Clicking a button toggles the field's visibility status in the ANAD table. To close the overlay, click anywhere in the grayish area outside the overlay. And example and its result is shown in Figure 5.

Note that the ANAD UI is "state-saving," in other words, when you re-visit the ANAD within the state-save time-out (currently 2 hours) – even after logging off or turning off your computer – setting custom field visibility will be set the same way as at your last visit (see Section 11.12).

Figure 5: Example for Setting Custom Field Visibility for the ANAD Table

ID	Ac Trs In	A: Temp Instab	D: Hyperbili
DOB	Disp	A: Feeding Diff	D: Temp Instab
TOB	Dsch Dt	A: BW/GA	D: Feeding Diff
BW	LOS	A: SGA	D: BW/GA
GA	Trs Loc	A: PTM	D: SGA
Sex	Ac Trs Out	A: NAS	D: PTM
Mult	Hsp Disp	A: Cong Anomaly	D: NAS
Del Mode	Hsp Dsch Dt	A: Cyanotic Ev	D: Cong Anomaly
Mother's DOB	CPQCC Record ID	A: Cardiac Ev	D: Cyanotic Ev
Mother's Age	ABX Days	A: Seizure	D: Cardiac Ev
Admit Type	CL Days	A: TRS-In Ins	D: Seizure
Adm Dt	CLABSI	A: TRS-In Bed Av	D: Other
Adm Tm	A: Susp Infection	A: Other	User ID for Update
Admit Notes	A: Resp Distress	D: Susp Infection	Updated
Birth Loc	A: Hypo glycemia	D: Resp Distress	Restore visibility
Ref Loc	A: Hyperbili	D: Hypo glycemia	

Click on a field's button to set its visibility in the table. In the example, ID is set to ON, Del Mode is set to OFF.

Click anywhere OUTSIDE the overlay or pop-up to close it!

Use the Restore Visibility button to set the table fields as they were when you clicked on the Set Col Vis button.

Show 16 entries CSV CPQCC A/D Refresh Upload New Edit Delete Add MATEX Edit MATEX Core Admit DX Disp DX Other Set Col Vis Query (1)   Search:

ID	DOB	BW	GA	Mult	Del Mode	Admit Type	Adm Dt	Ac Trs In	Disp	LOS
20200002	01-01-2020	2,402	34/0	S		Admitted from home or from another unit within my hospital after previous home discharge	02-23-2020	No	Home from this NICU	8
20200003	01-02-2020	2,052	33/1	2B		Inborn never home immediately admitted to the NICU after birth	01-02-2020		Home from this NICU	18
20200004	01-03-2020	2,377	31/0	S		Inborn never home immediately admitted to the NICU after birth	01-03-2020		Home from this NICU	32
20200001	04-05-2020	2,010	34/2	S	Vaginal	Outborn admitted from another hospital or non-hospital location or unit within my hospital	04-07-2020	Yes	Home from this NICU	70

Showing 1 to 4 of 4 entries (filtered from 37 total entries)

Previous 1 Next

7   ANAD Filtering and Queries

Another useful feature of the ANAD is the ability to filter NICU admissions. Three options are available for filtering specific rows of the ANAD table.

7.1   ANAD Filtering using the Search Box

Search: [   ]   The search box in the top right corner of the ANAD table provides a quick way to filter rows that meet specific criteria. This method of filtering is best used if you would like to quickly find a specific [`refnum`].[`readmit`] record or infants born, admitted or discharged on a specific day. Enter the filter criteria in the search box, and the ANAD table will immediately be updated to only include rows that meet the specified criteria. Note that the search performed is not field specific, in other words, all ANAD table fields are searched even those not visible. Also note that the search is case-insensitive.

7.2   ANAD Filtering using the Drop-Down Box

Another option to filter the ANAD is to use the drop-down box in the navigation bar at the top.

This drop-down box inserts specific terms into the Search Box that result in
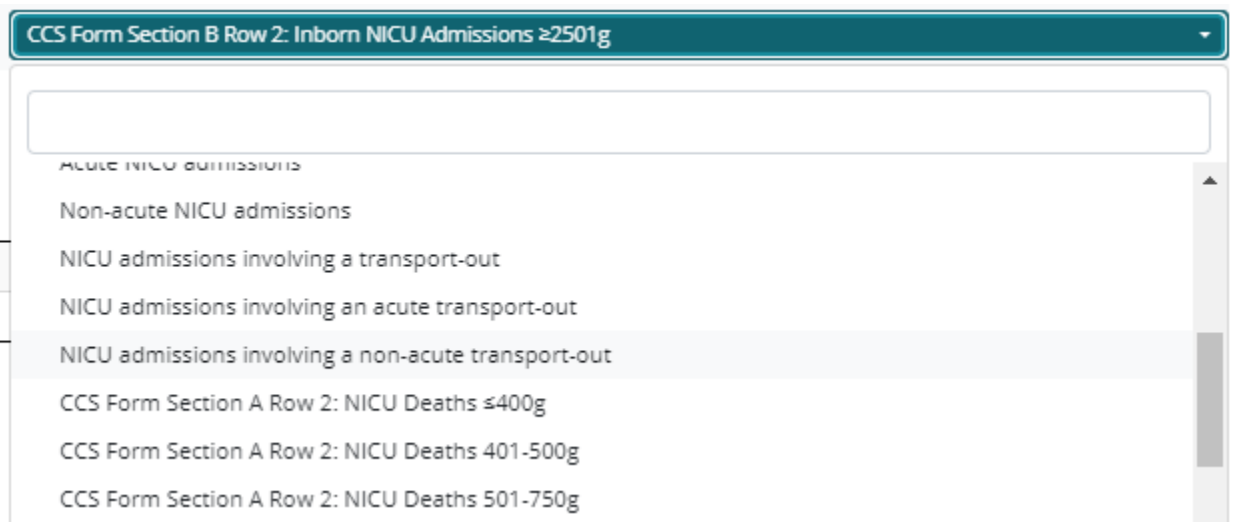
those rows being filtered that meet the criteria described in the drop-down.   This option is especially useful for identifying the specific NICU admissions that are used to generate the entries in Sections A through D of the CCS form.

Table 3 shows the filtering terms that are used by the drop-down to facilitate verification of CCS form entries.

<div align="center">

Table 3: ANAD Filtering Rules for CCS Form

</div>

BW (grams)	≤ 400	401-500	501-750	751-1000	1001-1500	1501-2500	> 2500	All BWs
Section A: NICU Deaths Prior to and Including the 28th Day of Life (Not Stillborn, Non-Delivery Room Deaths)	sar21	sar22	sar23	sar24	sar25	sar26	sar27	sar2
Section A: NICU Deaths after the 28th Day of Life (Not Stillborn, Non-Delivery Room Deaths)	sar31	sar32	sar33	sar34	sar35	sar36	sar37	sar3

BW (grams)	≤ 400	401-500	501-750	751-1000	1001-1500	1501-2500	> 2500	All BWs
Section B: Inborn Admissions to your NICU	sbr21	sbr22	sbr23	sbr24	sbr25	sbr26	sbr27	sbr2
Section B: Outborn Admissions to your NICU	sbr31	sbr32	sbr33	sbr34	sbr35	sbr36	sbr37	sbr3
Section B: Acute Outborn Admissions to your NICU	sbr41	sbr42	sbr43	sbr44	sbr45	sbr46	sbr47	sbr4
Section B: Non-Acute Outborn Admissions to your NICU	sbr51	sbr52	sbr53	sbr54	sbr55	sbr56	sbr57	sbr5
Section C: All Transports-Out from your NICU	scr11	scr12	scr13	scr14	scr15	scr16	scr17	scr1
Section C: Acute Transports-Out from your NICU	scr21	scr22	scr23	scr24	scr25	scr26	scr27	scr2
Section C: Non-Acute Transports-Out from your NICU	scr31	scr32	scr33	scr34	scr35	scr36	scr37	scr3

GA (completed weeks)	≤ 21	22-31	32-33	34-36	37-38	39-41	≥ 42	Unk GA	All GAs
Section D: Inborn Admissions to your NICU	sdr21	sdr22	sdr23	sdr24	sdr25	sdr26	sdr27	sdr28	sdr2

In addition, the following terms are used:

- atypeX, where X is one of the admission types as defined in Section CPQCC All NICU Admissions Database Layout. For instance, entering atype0 in the search box filters all inborn infants who were admitted to the NICU immediately after birth.
- dispX, where X is one of the disposition options defined in Section CPQCC All NICU Admissions Database Layout. For instance, entering disp3 in the search box filters all infants who died.
- .sih to filter infants who are not discharged yet (still in house).
- trsin filters all transports-in, NICU admissions from home, or NICU admissions from another unit within the NICU's hospital after a previous discharge home.
- trsin1 filters all acute NICU admissions.
- trsin0 filters all non-acute NICU admissions.
- trsout filters all NICU admissions involving a transport-out.
- trsout1 filters all NICU admissions involving an acute transport-out.
- trsout0 filters all NICU admissions involving a non-acute transport-out.
- CLDAYS filters all NICU admissions with a positive value for central line days.

- `CLABSI` filters all NICU admissions with the CLABSI check box checked.

Finally, note that you can construct your own filters using the [`admtnotes`] field. For instance, it might be important to you to track infants that you need to follow-up on. Entering a consistent abbreviation for this condition in the [`admtnotes`] field allows the filtering your NICU admissions to identify the set of infants affected.

7.3 Advanced ANAD Queries

More advanced ANAD queries can be formulated using the Query tool. Clicking on the Query tool brings up an overlay or pop-up that allows filtering criteria for each field. The tool allows combining several fields to generate more complex criteria.

After clicking on Add Condition, a row fills the display with options for adding a query condition.

The Field drop-down sets the field to base the query on.

The Condition drop-down is dependent on the attributes of the field chosen and differs depending upon whether a number, category, date, time, or free text entry field is chosen in the first drop-down.

Once the value field is entered, the ANAD table is instantly filtered to only include rows that meet the query criteria.
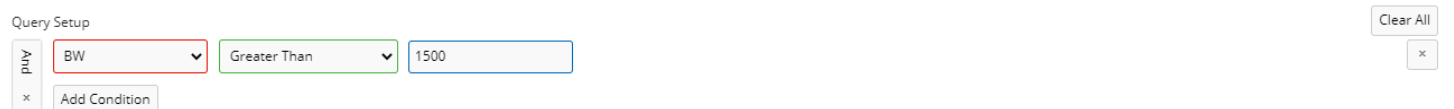
Additional conditions can be added.

Query Setup   Clear All

	BW ▾	Greater Than ▾	1500		>	×
And	Sex ▾	Equals ▾	Male ▾		>	×
×	Add Condition					

The button labeled "And" is a toggle that allows switching a logical "And" for the two conditions shown to a logical "Or," in other words it lets the user either narrow the set of queried records (And) or expand the set of queried records (Or).

It is also possible to apply these logical operators to rows by clicking on the > button in the right section of the query panel.

Query Setup   Clear All

		BW ▾	Greater Than ▾	1500		<	>	×
	Or	GA ▾	Greater Than ▾	31/0		<	>	×
And	×	Add Condition						
	Sex ▾	Equals ▾	Male ▾				>	×
×	Add Condition							

Individual rows can be removed by clicking on the x button in the condition's row.

All conditions can be cleared by clicking on Clear All.   Clear All

> **To close the Query panel, click anywhere in the dark gray area outside the panel.**

> **Note that the ANAD UI is "state-saving," in other words, when you re-visit the ANAD within the state-save time-out (currently 2 hours) – even after logging off or turning off your computer – the filtering rules discussed in sections 7.1, 7.2 and 7.3 will stay active (see Section 11.12).**

8   Populating the CCS Form Based on the ANAD

Starting with 2017, the on-line CCS form supports importing values from the ANAD. This section explains the rules underlying this import and how the import is performed.

8.1   ANAD to CCS Form Import Rules

To populate the CCS form for birth year `YYYY`, the All NICU Admissions Database is queried to include:

- All infants who were born in year `YYYY`.
- All infants admitted in year `YYYY`.

This distinction is important as CCS Form sections A, B, C, D and F all apply to birth year YYYY while section E applies to admission year `YYYY`.

As the CCS form does not allow reporting of infants with missing birth weights, only infants with known birth weight are included in the import.

CCS Form Section A

Neonatal deaths are based on infants coded with [`disp`] = 3 or [`disphsp`] = 3 with an age at death of 1 to 28 days.

Age at death is calculated as [`ddate`] − [`bdate`] + 1 for infants coded with [`disp`] = 3 or [`ddatehsp`] − [`bdate`] + 1 for infants coded with [`disphsp`] = 3.

Post-neonatal deaths are based on infants coded with [`disp`] = 3 or [`disphsp`] = 3 with an age at death of greater than 28 days.

CCS Form Section B

Inborn admissions are based on all admissions coded with [`atype`] as 0 or 1.

Admissions of infants born at the co-located hospital are based on all admissions coded with [`atype`] as 2.

Outborn admissions are all admissions coded with [`atype`] 3, 4, 111, 131 or 14.

Acute outborn admissions are all admissions coded with [`atype`] 3, 4, 111, 131 or 14 that are also coded as [`acutetrsin`] = Yes.

For instance, an infant admitted from the ER of a NICU's hospital after previous discharge home would be included if the admission is coded as acute ([`acutetrsin`] = Yes).

Non-acute outborn admissions are all admissions coded with [`atype`] 3, 4, 111, 131 or 14 that are coded as [`acutetrsin`] = No.

CCS Form Section C

Acute transports-out are all admissions coded with [`atype`] 0, 1, 2 3, 4, 111, 131 or 14 that are also coded as [`acutetrsout`] = Yes.

Non-Acute transports-out are all admissions coded with [`atype`] 0, 1, 2 3, 4, 111, 131 or 14 that are coded as [`acutetrsout`] = No.

CCS Form Section D

Inborn admissions are based on all admissions coded with [`atype`] as 0 or 1.

Admissions of infants born at the co-located hospital are based on all admissions coded with [`atype`] as 2.

<u>CCS Form Section E</u>

The total number of **patient days** is obtained as the sum of each admission's individual contribution to patient days during the year YYYY.

The calculation for an admission's contribution to patient days in year YYYY is:

- For admissions starting and ending in year YYYY: [`ddate`] – [`adate`]
- For admissions starting in year YYYY-1 and ending in year YYYY: [`ddate`] – January 1, YYYY
- For admissions starting in year YYYY and ending in year YYYY+1: January 1, YYYY+1 – [`adate`]
- For infants who are still-in-house, the current date is replaced for the discharge date.

Note that this calculation is problematic if the data on discharge date were imported from the CPQCC NICU A/D form. As the CPQCC NICU A/D form does not distinguish whether an infant was discharged directly from the NICU or from another unit of the hospital after step-down transfer from the NICU, patient days in the NICU will be over-estimated.

The total **number of days with antibiotic exposure** in year YYYY is obtained based on the ANAD value distinguishing antibiotic days in year YYYY and – if an admission overlaps two years – YYYY + 1.

<u>CCS Form Section F</u>

Central line days by birth weight are determined based on all admissions to infants born in year YYYY.

CLABSI by birth weight is determined based on all admissions to infants born in year YYYY.

8.2   Importing ANAD Based Values into the CCS From

Show Values based on Optional NAD   Starting with the 2017 CCS form, a button was added in the lower right section of the CCS form labeled Show Values based on ANAD. Clicking on this button briefly hides all buttons in the bottom section of the form, and then shows the CCS form with information retrieved from the ANAD unless no such information is found.

Note that the ANAD based values for CCS form fields are not imported directly into the associated field, instead an additional row is displayed on the CCS form with values based on the ANAD.

Upon successful retrieval of ANAD values, the button text in the bottom right corner changes to Hide Values based on ANAD, and an additional button Populate Form with Values based   Populate Form with Values based on Optional NAD   Hide Values based on Optional NAD   on ANAD appears. This button can be used to replace the values in the CCS form fields with the ANAD based value (see Figure 6).

Both actions can be reversed.

The final value for each cell can be modified by the user. **The form needs to be saved for changes to be written to the CCS form database.**

Figure 6: Example for CCS Form Section B, Inborn Admissions to your NICU, with ANAD Based Values

Inborn Admissions to your NICU

0	0	0	0	0	0	0	**0**

Should be ... compared to your NICU Data submissions

≥ 0	= 0	= 0	= 0	= 1	≥ 2	≥ 0	≥ 3

↑ Populate Form with Values based on Optional NAD   ↓ Show Values based on Optional NAD

Inborn Admissions to your NICU

0	0	0	0	0	0	0	**0**

Should be ... compared to your NICU Data submissions

≥ 0	= 0	= 0	= 0	= 1	≥ 2	≥ 0	≥ 3

Should be ... based on your Optional NAD

= 0	= 0	= 0	= 0	= 1	= 10	= 9	= 20

↑ Restore Values prior to Optional NAD   ↓ Hide Values based on Optional NAD

Inborn Admissions to your NICU

0	0	0	0	1	10	9	20

Should be ... compared to your NICU Data submissions

≥ 0	= 0	= 0	= 0	= 1	≥ 2	≥ 0	≥ 3

Should be ... based on your Optional NAD

= 0	= 0	= 0	= 0	= 1	= 10	= 9	= 20

9 CPQCC NICU A/D Form Connection

CPQCC NICU A/D The ANAD can be used to either add or access a CPQCC NICU A/D form from the ANAD UI. This feature is supported by the CPQCC NICU A/D button that can be found in the list of buttons available above the ANAD table.

When clicking on a record in the ANAD table, the CPQCC NICU A/D button becomes enabled if all the following conditions are met:

- A NICU A/D Record ID must be entered in the applicable ANAD field (last field on the Demographics tab).

- The infant's birth date must be entered.

- The infant's admission date must be entered.

- The infant's admission type must be checked.

- The infant's year of birth must be 2018 or later (for closed-out years or after IDs for a year have been confirmed, it is only possible to open/edit existing NICU A/D records, it is not possible to enter new records).

- Except for inborn small babies who were never home, the implied age at NICU admission must be less than or equal to 28 days.

- The current record must pertain to a new episode of care ([atype] in {0,1,2,3,4,111,131,14}).

Clicking on the CPQCC NICU A/D button will either open the existing or start a new CPQCC NICU A/D form. Figure 7 shows the processing in the background that either leads to successful opening of an existing record or starting of a new record, and it explains the possible errors.

If an existing NICU A/D record is found, it is opened and any of the

Edit Data following fields – **if pending** – is updated with the ANAD value: [bdate], [btime], [bwgt], [gaweeks], [gadays], [sex], [locate], [dayadmiss], [birthlocation], [pdh], [readmit], [mdate], [matrace], [hisp], [mult], [nbirths], [birthorder], [delmod], [fdisp], [los1], [xferlocation]. The sidebar is set to the Edit Data selection.

If an existing NICU A/D record is not found, a new record with the record ID coded in the ANAD NICU A/D Record ID field is started. When the A/D form is opened, a message is displayed to the user, and the sidebar selection is set to Add New Data. All A/D form fields listed in the previous section are populated

Add New Data based on the ANAD if possible.

Note that delivery mode in the ANAD is coded as Vaginal, Caesarean or Unknown while the A/D form breaks vaginal deliveries into spontaneous and operative deliveries. As most vaginal deliveries are spontaneous, rather than not mapping the field value vaginal at all, it is mapped as spontaneous vaginal.

CPQCC NICU DRD form found for record ID provided.
Unable to open CPQCC NICU A/D record.

Close

Successfully initialized new A/D record from NAD.

Close

Your NICU has confirmed the IDs for 2018.
Unable to add new CPQCC NICU A/D record.

Close

CPQCC NICU A/D form found, however the NAD birth year (2019) is not the same as the CPQCC NICU A/D birth year.
Unable to open CPQCC NICU A/D record.

Close

Figure 7: Flow Chart for Editing an Existing or Adding a New NICU A/D Record from the ANAD
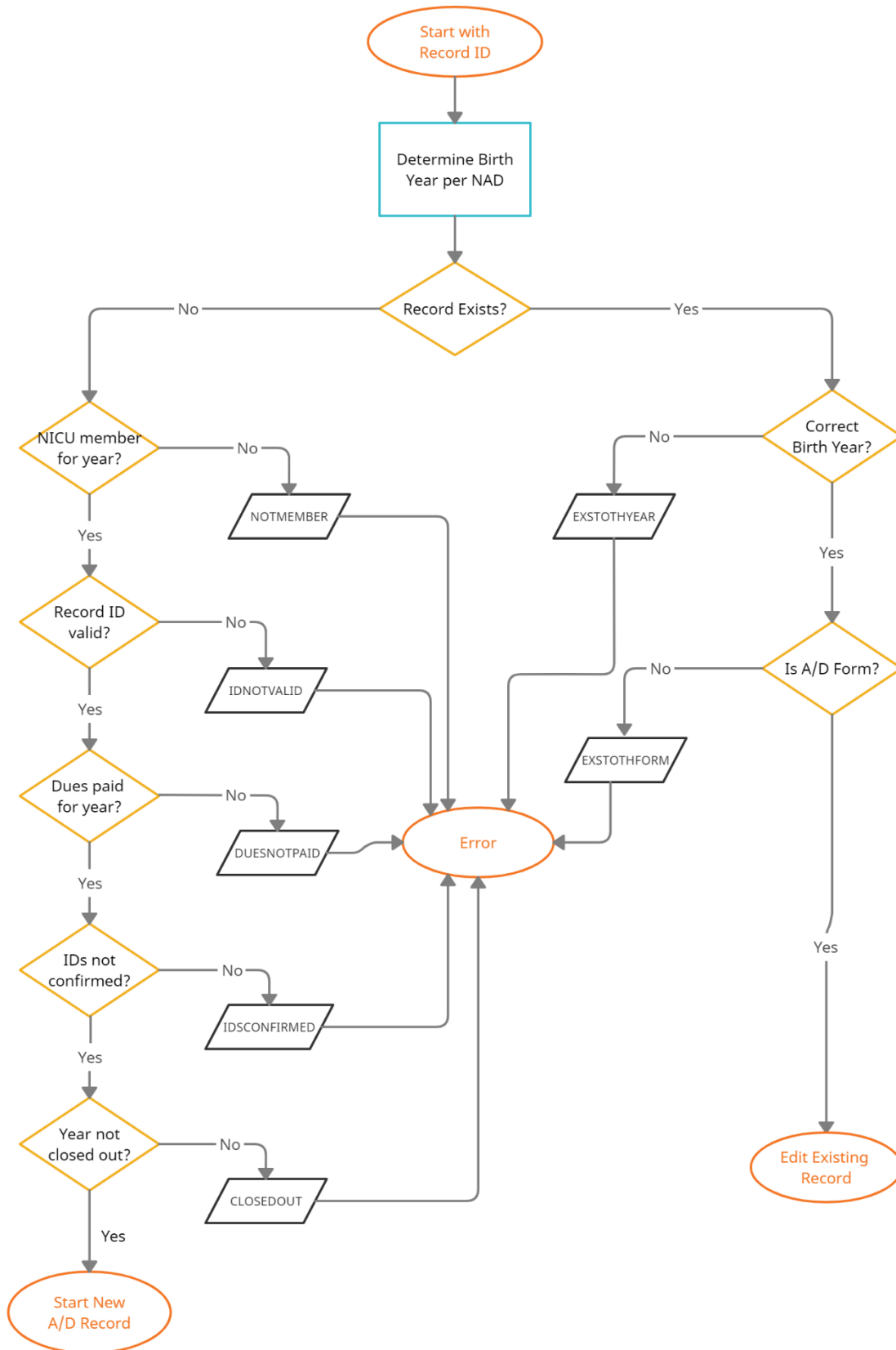
The ANAD allows users to code [birthlocation] and [xferlocation] as free text. When populating the NICU A/D form, the text value is compared to the list of possible locations and the best match chosen. **Please contact support if you find that consistently the incorrect location is mapped, so we can improve the algorithm used.**

It is important to note that **new records are always started with an A/D form**. If a new record for an outborn infant is started a check box is added to the A/D form next to the header showing the NICU ID, Record ID, Birth Year, etc.

Successfully initialized new A/D record from NAD. If this A/D record should be started with a CPeTS form, please check the **Start with CPeTS** checkbox at the top of the A/D form.

Close

You must check the "Start with CPeTS" check box to initialize a new infant record with a CPeTS and A/D form. Checking this box will not switch to a CPeTS form. It means that when the A/D form is saved, a CPeTS form is initialized as well. When using the Save & Summary button to save the A/D form, the appropriate link in the printed submission summary can be used to open the CPeTS form; or the CPeTS form can be opened via the Edit Data list.
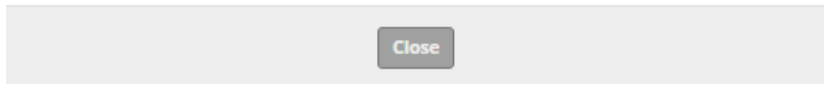
2021 Admission/Discharge Form									59:04

NICU ID: **0000**   Record ID: **1640**   Birth Year: **2021**   *DOB: 01-05-2021   BW: 1350   GA: 28/2   NICU Data Eligible Infant*   ☑ Start with CPeTS

Demographics Items 1-8	Maternal HX Items 9-18	DR Items 19-23	Respiratory Items 24-39	Infections Items 40-42	Other DX/PX Items 43-47	Neurological Items 48-51	Anom. / Bili Items 52-55	Disposition Items 56-60

Demographics

1. Birth Weight   1350   grams

2. Head Circumference at Birth ___ cm ☐ Not Done ☐ Unknown

3. Best estimate of gestational age   a) Weeks 28 ☐ Unknown   b) Days: 2 ☐ Unknown

4. Date of Birth 01-05-2021 📅   Time of Birth 02:14 ☐ Unknown

5. Infant Sex Male ⌄

6. Died in Delivery Room No ⌄

7. a) Location of Birth Outborn ⌄
    Note: For infants who were previously home, always check Outborn, even if the infant was born at your hospital or – for satellite NICUs – was born at the co-located hospital.
    b) Age in Days at Admission to your **Hospital** 1
    c) Select hospital of birth for outborn infants Demo Center B (000001) ⌄
    Note: Your NICU and the NICU at the birth location both have agreed to data sharing. Saving the record will give the NICU at the birth location access to items 1-23, item 52 and disposition information.

The new A/D form must be saved using the usual process for starting or editing an A/D form.

This new feature might complement the existing workflow of users who upload records into the ANAD from their own NICU admissions spreadsheet. Spawning new CPQCC NICU A/D records from such uploaded records might help reduce a NICU's overall data entry burden.

10 MatEx Connection

The ANAD can be used to either add or access a Maternal Exposure (MatEx) database record from the ANAD UI.

This feature is only supported for NICUs participating in the optional MatEx data collection.

To efficiently find infants eligible for a MatEx record, you can use the following query:

Query Setup   Clear All

Any | A: NAS ⌄ | Yes ⌄   ×

× | Add Condition

Or you can choose the drop-down option:

Admit Reason: Neonatal abstinence syndrome   ▾

Add MATEX   Clicking on a record in the ANAD table allows you to add a new MatEx record. If a MatEx   Edit MATEX
              record already exists, you will get the Edit MatEx option.

Adding a new MatEx record from the ANAD will start the new record with the following fields pre-populated:

[nadid], [cpqccid], [bdate], [btime], [sex], [mdate], [adate], [gestage], [bwgt], [ddate], [locate], [birthlocation], [hspdisp] (only if death).

Editing an existing MatEx record will update any fields with a pending value only. In other words, if in the MatEx database, the value for sex is not coded, it will be populated by the ANAD coded value.

11 FAQ

11.1 This database is supposed to help with the LAINA CCS mandate, but how are lower and higher acuity NICU admissions distinguished based on the data captured?

The ANAD captures lower and higher acuity admissions through the [cpqccid] field. Any infants who are assigned a NICU Database Record ID are considered higher acuity admissions. Note that the same cpqccid might apply to multiple NICU stays. For instance, if an infant is admitted to your NICU, then transported out to another NICU and readmitted to your NICU, the [cpqccid] for the two NICU stays captured in the ANAD is the same.

What about infants admitted after DOL (day of life) 28? The NICU Database eligibility criteria only cover NICU admission on or before DOL 28. Therefore, to distinguish lower and higher acuity admissions for infants admitted after DOL 28 to your NICU, make sure to check the [acutetrsin] checkbox if the admission is for acute. Admissions after DOL 28 are considered higher acuity if the [acutetrsin] checkbox is checked.

11.2 Are Delivery Room Deaths (DRDs) included in the ANAD?

Delivery Room Deaths are not included in the ANAD. DRDs were never admitted to the NICU, and therefore cannot be part of this database.

11.3 Do the reference numbers / IDs have to be based on birth year?

The reference numbers can be assigned in any way desired, however, they should be distinct for each infant / stay. Your NICU's data are stored in one data file, which is indexed based on the reference numbers and re-admission counter. Therefore – like the CPQCC ID number – you may not repeat reference numbers for different birth years or admission years.

11.4 Is it possible to upload CSV files for more than one birth year at a time?

Yes. For the CSV upload, all birth years greater than or equal to 2016 are acceptable. When you are browsing your data though, data are always organized by year of birth or by year of admission. Therefore, if you upload a CSV file with multiple birth years and/or admission years, make sure to load the ANAD for all years included to verify the upload ran correctly.

11.5 Help! My CSV file is rejected "No records found"

When I attempt to upload my CSV file, none of the records are uploaded. What is the problem?

To add a record in your CSV file to the ANAD, the following three fields MUST have valid values:

- [refnum] or [id], i.e., an identifier for your ANAD record
- [adate], i.e., the admission date
- [bdate], i.e., the infant's birth date.

> No records found in EDS file for most recent three birth years.
>
> Upload failed.
>
> Close

Any record that lacks a valid value for these three fields is not uploaded. If all your records miss the [id] or [refnum] field, the CSV file is rejected, and you get the 'No records found' message.

11.6 What occurs if multiple users from my NICU access the All NICU Admissions Database at the same time?

It is possible that multiple users from the same NICU can access the ANAD at the same time. However, unless a user refreshes the database from the link on the navigation bar, other users' edits will not be apparent.

If your NICU chooses to automatically generate the next [`refnum`] for a newly added NICU admission, data entry of 2 or more different NICU admissions by 2 or more different users will all be honored and get different reference numbers.

We currently do not have an access notice in place, but, if need be, this access notice can be added. We recommend that if multiple users access the ANAD simultaneously that you regularly refresh the database by reloading it from the sidebar link.

11.7 What is the backup schedule for the ANAD?

The ANAD is backed up once daily shortly after midnight. The CPQCC data center also maintains an archive that tracks all database updates.

We strongly recommend that you regularly download your ANAD through the CSV option allowing you to keep your own database backup locally.

11.8 I am already entering a CPQCC NICU A/D Form for all NICU admissions, how can I get my data into the ANAD?

The import of CPQCC NICU A/D records is supported and described in detail in Section 3.3. Make sure to pay attention to the drawbacks of this import as the definition of a data row for the CPQCC NICU A/D database and ANAD is different.

11.9 Why are there so many admission types, and how can I figure out easily which one to use?

The admission type field was designed to capture the information needed to describe the source of the infant's admission in the context of the CCS form. For the CCS form, sections A through D count based on CPQCC episodes of care while Section E counts NICU days. The following flow chart was set up to assist with choosing the correct admission type.

Figure 8: Flow Chart for Determination of Admission Type
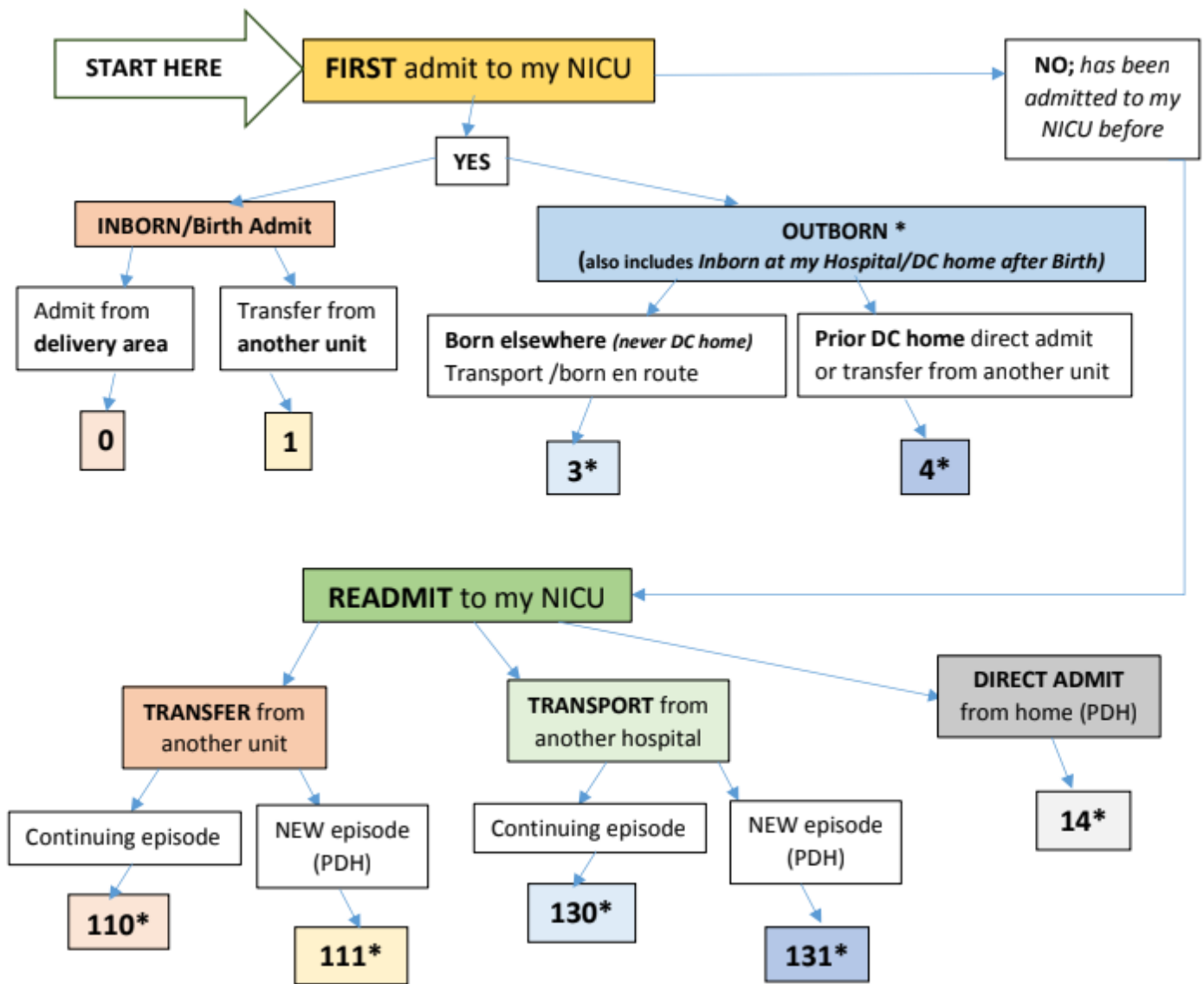
Admission types suffixed with a * require the additional specification of the [`acutetrsin`], i.e., the acute transport/transfer field.

11.10 How do I code an infant that is born at my hospital, admitted to the NICU, transferred to another unit of the hospital, then re-admitted to the NICU, then transferred to another unit of my hospital and then discharged home?

For the ANAD, this situation should be represented by two rows:

Row 1:
    `atype=1`: Inborn never home admitted from another unit within my hospital
    `disp=4`: Transfer-out to another unit within my hospital

Row 2:
    `atype=110`: Re-admitted from another unit within my hospital (continuing care episode)
    `disp=4`: Transfer-out to another unit within my hospital
    `hspdisp=1`: Discharged alive from my hospital

Note that the equivalent CPQCC NICU A/D data entry would consist of 1 record only.

The ANAD data entry implies that:

- Correct capture the total number of patient days in your NICU for CCS form section E.
- Correct capture of daily NICU occupancy.

11.11 A record for the first admission and 3 readmissions was entered, but the birth date is wrong. How can I fix this?

To update the birth date in this situation, open the first (base) record for this infant, correct the birth date and save the record. All readmission records will have the birth date updated along with the base record.

ID	DOB	TOB	BW	GA	MULT	Adm Type	Adm Dt	Adm Tm	Admit Notes	Birth Loc	Ref Loc	Ac Trs In	Disp	Dsch Dt	Ac Trs Out	CPQCC ID	Updated
13	09-01-2017	02:34	1,790	34/6	S	3	09-01-2017	07:30		DEMO B		Yes	4	09-20-2017		99999	12-08-2017 07:11
13.1	09-01-2017	02:34	1,790	34/6	S	14	10-03-2017	08:00		DEMO B		No	1	10-10-2017			12-08-2017 07:12
13.2	09-01-2017	02:34	1,790	34/6	S	111	11-01-2017	09:11		DEMO B		No	4	11-03-2017			12-08-2017 07:27
13.3	09-01-2017	02:34	1,790	34/6	S	111	11-24-2017	04:03		DEMO B		No	1	12-01-2017			12-08-2017 07:28

11.12 What does it mean that the ANAD UI is "state-saving?"

State-saving implies that the ANAD User Interface saves your settings for the length of 2 hours after your last access. Specifically, all the following settings are saved:

- Number of rows displayed on one page that can be set with the page settings in the top left corner of the ANAD table.   Show [16 ▾] entries
- The last sort order applied.
- Any search box entries (see Section 7.1).
- Any query settings (see Section 7.2).
- Any custom field visibility settings (see Section 6).

11.13 Help, all my records have disappeared!

Please make sure that you:

- have the correct birth and/or admission year active.
- have removed all search filters (see Section 7.1 and Section 7.2).
- have removed all query settings (see Section 7.3).

11.14 Can I track other items that are important to me with the ANAD?

You can use the [admtnotes] field to capture any other information relevant for you.

Note also that if you track additional information in a spreadsheet outside of the ANAD, you can add whichever fields you like. There is no need to drop these fields prior to uploading your spreadsheet as a CSV file as all fields that are not recognized as an ANAD field name are dropped.

> **Please do not include any fields with PHI as extra fields in your CSV file.**
>
> **Please do not enter PHI in the [admtnotes] field.**

11.15 Can you provide more details on each of the admission reasons and discharge diagnoses?

The table below provides additional possible descriptions.

<p align="center">Table 4: Admission Reasons and Discharge Diagnoses</p>

ANAD Item	Admission Reason / Discharge Diagnosis	Other Possible Descriptions
adx0, ddx0	Suspected infection	At risk for infection/sepsis
		Observe for infection/sepsis
		Risk factors for infection/sepsis
		Rule out infection/sepsis
		Suspected infection/sepsis
adx1, ddx1	Respiratory distress	Difficulty breathing
		Grunting/flaring/retractions
		Increased work of breathing
		Labored breathing
		Need for respiratory support
		Oxygen requirement
		Respiratory insufficiency
		Tachypnea
adx2, ddx2	Hypoglycemia	**Include "rule out"**
		Low blood glucose
		Low blood sugar
		Low sugar
adx3, ddx3	Hyperbilirubinemia	**Include "rule out"**
		High bilirubin
		Icterus
		Jaundice
		Phototherapy
adx4, ddx4	Temperature instability	Cold baby
		Cold stress
		Hypothermia
		Low temperature
		Thermal instability
	Feeding difficulties	Bile or yellow residuals

ANAD Item	Admission Reason / Discharge Diagnosis	Other Possible Descriptions
adx5, ddx5		Choking with feeds
		Inability/unable to feed
		Large residuals
		Low or insufficient per oral (po) intake
		Need for gavage or tube feeding
		Poor intake
		Poor per oral (P.O.)
		Spitting up
		Turns blue or gray with feeds
		Tires with feeds
		Vomiting
adx6, ddx6	BW/GA per policy	May have other issues or no issues. Check with your admitting policies. If the infant meets admitting policy, may only be described as "X week preterm infant" or "X gram low birthweight infant"
adx7, ddx7	Small for gestational age	Growth failure
		Growth retarded
		IUGR
		SGA
		Small for dates
		Weight less than 10th percentile
adx8, ddx8	Perinatal transitional monitoring	Mottling
		Pallor/pale
		Poor color
		Poor perfusion
		Rapid breathing
		Unstable
adx9, ddx9	Neonatal abstinence syndrome	**Include "rule out" or "observe for"**
		Born to a mom with drug history
		Drug withdrawal
		Intrauterine drug exposure
		Maternal or mother's substance abuse or use

ANAD Item	Admission Reason / Discharge Diagnosis	Other Possible Descriptions
		Maternal or mother's polysubstance abuse or use
		NAS
		Opiate dependence
adx10, ddx10	Dysmorphic/chromosomal anomaly	**Include "rule out" or "observe for"**
		Abnormal looking (anatomy)
		Birth defect
		Congenital anomaly
		Downs syndrome
		Fetal alcohol syndrome
		Trisomy
		Another anomaly or syndrome
adx11, ddx11	Apnea/cyanotic event	Dropped SATS
		Had an apnea
		Low oxygen SATS
		Stopped breathing
		Turned blue
		Turned pale
adx12, ddx12	Cardiac event	Aortic stenosis or atresia
		Atrial septal defect [ASD]
		Cardiomyopathy
		Coarctation of the aorta
		Congenital heart disease
		Ebstein's anomaly
		Had a murmur
		Had heart abnormality seen on prenatal ultrasound
		Heart defect
		Hypoplastic left heart syndrome [HLHS]
		Mitral stenosis or atresia
		Pulmonic/pulmonary stenosis or atresia
		Shone syndrome or complex
		Transposition of the great vessels/arteries [TGV, TGA]

ANAD Item	Admission Reason / Discharge Diagnosis	Other Possible Descriptions
		Tetralogy of Fallot [TOF]
		Tricuspid stenosis or atresia
		Truncus arteriosus
		Ventricular septal defect [VSD]
adx13, ddx13	Seizure	**Include "rule out" or "observe for"**
		Convulsion
		Jitteriness
		Jerky or rhythmic movements
		Spells
adx14	Transport-in for insurance reasons	
adx15	Transport-in for bed availability reasons	Census
		Staffing
adx16, ddx16	Other Reason	

11.16 Cross walk of Conditions Coded on the NICU A/D form and the ANAD Problems at Discharge

Problem at Discharge	Mark discharge DX as Yes if these conditions are met …	
	Conditions in cells with a gray background are only used if no problem at discharge can be identified based on all other rules	
Suspected infection	Early sepsis	`[ebseps] IN (1 2 3 4)`
	Late bacterial sepsis here or here/elsewhere or elsewhere	`[lbpath] IN (11 12 13)`
	cNegStaph infection here or here/elsewhere or elsewhere	`[cnegstaph] IN (11 12 13)`
	Fungal infection here or here/elsewhere or elsewhere	`[fungal] IN (11 12 13)`
	Congenital infection	`[viral] EQ 1`
	Mother Group B Strep Positive	`[groupbstrep] EQ 1`
	Mother with Other Infection	`[ancminf] EQ 1`
	Mother with Chorioamnionitis	`[ancmchorio] EQ 1`

Problem at Discharge	Mark discharge DX as Yes if these conditions are met …	
	Conditions in cells with a gray background are only used if no problem at discharge can be identified based on all other rules	
Respiratory	RDS	`[rds] EQ 1`
	Duration of ventilation greater than 0	`[durvent] IN (2 3)`
	Use of nitric oxide here or here/elsewhere or elsewhere	`[nitrico] IN (11 12 13)`
	Use of supplemental oxygen	`[oxy] EQ 1`
	Use of CPAP	`[cpap] EQ 1`
	Use of Non-Invasive Nasal Ventilation	`[nimv] IN (2 3)`
	Use of conventional intubated ventilation	`[vent] EQ 1`
	Use of high frequency intubated ventilation	`[hfv] EQ 1`
	Meconium aspiration	`[meconium] EQ 1`
	Use of ECMO here or here/elsewhere or elsewhere	`[ecmo] IN (11 12 13)`
	Transported out for ECMO	`[transcode] IN (0)`
	Use of surfactant	`[surfx] EQ 1`

	Use of intubated vent, NIMV, LMA in DR	`[dret] EQ 1`
		`[drnippv] EQ 1`
		`[drlma] EQ 1`

	Use of chest compressions in DR	`[drcc] EQ 1`
	Discharged on supplemental oxygen	`[oxfinal] EQ 1`

	Discharged on any respiratory support device	`[hfncfinal] IN (1 2 3)`
		`[cpapfinal] EQ 1`
		`[ventfinal] EQ 1`
		`[nimvfinal] EQ 1`
		`[hfvfinal] EQ 1`

	Surgery codes S101: Tracheostomy S210: Bronchoscopy S213 Lung Transplant	`[srgcdX] IN ("S101" "S210" "S213")`

Hypoglycemia	Description of fetal condition includes evidence of hypoglycemia.	`[ancfdesc] includes:`
		`hypoglycemia|low sugar|low`
		`blood sugar|low`

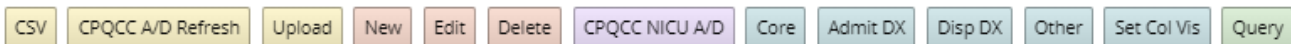| Problem at Discharge	Mark discharge DX as Yes if these conditions are met … Conditions in cells with a gray background are only used if no problem at discharge can be identified based on all other rules	
		`glucose|glucose level low|hypoglycemic`
Hyperbilirubinemia	Bilirubin > = 25 mg/dl	`[bililevel] IN (2 3)`
	Exchange transfusion	`[exchange] EQ 1`
Temperature instability	NICU admit temperature < 36.4 (no hypothermic therapy)	`[atemp] < 36.4`
Feeding difficulties	NEC here, elsewhere, or here/elsewhere	`[nec] IN (11 12 13)`
	Gastro-Intestinal Perforation here, elsewhere, here/elsewhere	`[giperf] IN (11 12 13)`
	Any abdominal surgery	`[srgcdX] IN: ("S3")`
	Any genito-urinary surgery	`[srgcdX] IN: ("S4")`
	Poor growth (z-score delta > 0.8 for infants who are at least 2 weeks old)	Calculated based on birth weight gestational age, discharge weight, age in days at admission and initial LOS.
BW/GA	BW <= 1500 grams GA <= 34 weeks	`. < [bwgt] <= 1500` `. < [gaweeks] <= 34`
Small for Gestational Age	Fetal condition: IUGR	`[ancfiugr] EQ 1`
	Fenton percentile at birth < 10%	`Based on gestational age, birth weight and sex.`
Perinatal transitional monitoring	Fetal condition: Non-Reassuring Fetal Status	`[ancfdis] EQ 1`
	1-Minute APGAR < 4	`0 <= [ap1] < 4`
	5-Minute APGAR < 7	`0 <= [ap5] < 7`
	10-Minute APGAR < 7	`0 <= [ap10] < 7`
	Use of CPAP in delivery room	`[drcpap] EQ 1`
Neonatal abstinence syndrome	Check other maternal antenatal condition description and other fetal condition description if it includes evidence of substance use.	`[ancmdesc] or [ancfdesc] include at least one of the following keywords:` `amph|amphetamine|buprenorphine |cannabis|cocaine|codeine|drug |etoh|fentanyl|heroin|hydrocod one|hydromorphone|iude|marijua na|meth|methadone|narcotic`

Problem at Discharge	Mark discharge DX as Yes if these conditions are met … Conditions in cells with a gray background are only used if no problem at discharge can be identified based on all other rules	
		`use|nas|neonatal abstinence syndrome|opiate|opioid|oxycodone|percocet|smoking|sub abuse|suboxone|subs abuse|substance abuse|substance use|subutex|thc|uds|withdrawal`
		`[ancfdesc] includes at least one of the following keywords: alcohol|prozac|zantac|zoloft`
Dysmorphic/chromosomal anomaly	Birth defect yes	`[cmal] EQ 1`
	Fetal condition includes fetal alcohol syndrome.	`[ancfdesc]includes at least one of the following keywords: fetal alcohol syndrome|fas (must be single word!)`
	Fetal anomaly	`[ancfano] EQ 1`
Apnea/cyanotic event	Discharged on apnea/cardio-respiratory monitor	`[acfinal] EQ 1`
Cardiac	PDA	`[pda] IN (2 3)`
	Any open Heart or Vascular surgery (surgery codes starting with S5)	`[srgcdX] IN: ('S5')`
	Any diagnostic or interventional cardiac catheterization	`[srgcdX] IN: ('S6')`
	Any heart defect	`200 <= [bdcdX] < 300`
Seizure/Neurological	HIE (any)	`[hie] IN (3 4 5)`
	Seizures	`[seizure] EQ 1`
	Peri IVH	`[igrade] IN (1 2 3 4)`
	Cystic PVL	`[pvl] EQ 1`
	Any CNS surgery	`[srgcdX] IN: ('S9')`
	Any CNS anomaly	`100 <= [bdcdX] < 200`
	Other Intracranial Hemorrhage	`[othhem] EQ 1`
	Cerebellar Hemorrhage (starting 2022)	`[cerebellar_hem] EQ 1`

| Problem at Discharge | Mark discharge DX as Yes if these conditions are met … | |
	Conditions in cells with a gray background are only used if no problem at discharge can be identified based on all other rules	
	Hypothermic therapy	[acooling] IN (1 2)
	Perinatal Asphyxia	[pa] EQ 1
	Transported out for Hypothermic Therapy (starting 2022)	[transcode] IN (10)
Other	Any other surgery not included in any condition above.	

11.17 Why does this documentation show different buttons in some figures than I am seeing on the NICU Data website?

Please note that the set of buttons available at the top of the ANAD table was updated in January 2021. where the revisions do not affect the feature described, figures might still display the previous version of the button set. The current button sets are shown below.

Button set for NICUs not participating in MaTex:

CSV | CPQCC A/D Refresh | Upload | New | Edit | Delete | CPQCC NICU A/D | Core | Admit DX | Disp DX | Other | Set Col Vis | Query

Button set for NICUs participating in MaTex where selected record does not have a MaTex record.

CSV | CPQCC A/D Refresh | Upload | New | Edit | Delete | New MATEX | CPQCC NICU A/D | Core | Admit DX | Disp DX | Other | Set Col Vis | Query

Button set for NICUs participating in MaTex where selected record does have an associated MaTex record.

CSV | CPQCC A/D Refresh | Upload | New | Edit | Delete | Edit MATEX | CPQCC NICU A/D | Core | Admit DX | Disp DX | Other | Set Col Vis | Query

11.18   What do the small turquoise badges on the ANAD form do?

Edit NAD Record

| Demographics | Admission | ABX / Central Lines | Disposition |

NICU Discharge Date   `01-18-2021`
`Set to Admit Dt`

NICU Disposition ⊖
- ◉ Home from this NICU
- ○ Transport-Out to another hospital
- ○ Died in this NICU
- ○ Transfer to another unit within my hospital

Discharge Diagnoses
`Check Admit Reasons`
- ☐ Suspected Infection ⓘ
- ☐ Respiratory distress ⓘ
- ☑ Hypoglycemia ⓘ
- ☐ Hyperbilirubinemia ⓘ
- ☐ Temperature instability ⓘ
- ☐ Feeding difficulties ⓘ
- ☐ BW/GA ⓘ
- ☐ Small for gestational age ⓘ
- ☐ Perinatal transitional monitoring ⓘ
- ☐ Neonatal abstinence syndrome ⓘ
- ☐ Dysmorphic/chromosomal anomaly ⓘ
- ☐ Apnea/cyanotic event ⓘ
- ☐ Cardiac event ⓘ
- ☐ Seizure ⓘ
- ☐ Other Reason ⓘ

[optional] Check diagnoses for this discharge.

Several fields have turquoise badges underneath or next to the field name: admit date, admit time, NICU discharge date and discharge diagnoses. Two examples are shown in the figure to the left.

Clicking on these badges allows the user to populate the associated field from the field indicated on the badge. For instance, the admission date can be set to the infant's birth date (over 20% of infants are inborn and admitted to the NICU immediately after birth). Or the discharge date can be set to the infant's admission date (as shown in the example on the left).

Members have requested to easily check all discharge diagnoses in the same way that admission reasons are checked. Clicking on Check Admit Reasons performs this task. Note that additional discharge diagnosed selected are preserved!

12 Acknowledgements and Closing Comment

We want to acknowledge the supportive and constructive help that we have received from CPQCC users:

Amy Johnson has been instrumental in sharing her internal tracking mechanism of NICU admissions, helping with database design, review of the on-line interface, testing CSV uploads and populating and verifying the CCS form from the All NICU Admissions Database.

Julie Evans has provided valuable feedback particularly with respect to specific admission patterns in freestanding Children's hospitals which has impacted several revisions addressing shortcomings not perceived at initial design.

Cindy Bell and her colleagues at UCLA Mattel Children's Hospital have aided with validating the population of the CCS form based on the ANAD allowing us to test and refine the process. This group has also requested the ability to track maternal race and Hispanic origin which was added in December 2021.

Bonnie Lyons suggested adding length of stay and the ability to track antibiotic and central line use to the ANAD, two great suggestions that were implemented in January 2018.

Jennifer Blanke pointed out that several users have chosen to enter their NICU infants first into the ANAD. Should the infant qualify for the CPQCC NICU Data collection, these users then start a NICU A/D form. Due to this workflow, she suggested the ability to add new and edit existing records from the ANAD allowing common fields to transfer over. The data center followed up by implementing this feature (see section 9) in January 2021.

Pamela Aron-Johnson made several suggestions, among them the addition of text box allowing users to specify additional information on discharge diagnoses (added in December 2021).

Amanda Smith encouraged the ability to map ICD-10-CM admission and discharge diagnoses to admit reasons and problems at discharge and helped with suggestions on how this tool might be incorporated in the EDS upload flow (added in October 2022).

We are tremendously grateful for your contributions and generous support.

The ANAD is an enhancement offered to CPQCC members as part of their CPQCC membership. CPQCC staff have strived to create a tool that is simple and provides useful features that integrate well with CPQCC deliverables.

Any feedback is welcome. Please use the CPQCC Help Desk to send us comments or report technical difficulties.