

V 11.3 Special Report: Late Preterm Births

**Reminder: NPIC/QAS
CME/CEU Program**

*“At Home with our
Premature Infant”*

May 2, 2012; 12:00 EDT
To register, go to www.npic.org

I. Introduction/Background

Between 1983 and 2006 there was a 30% increase in preterm births in the United States (from 9.6 % to 12.8 % of total births) resulting in 1 in 8 infants being born premature. Infants born in the *late preterm period*, defined as 34 0/7 to 36 6/7 completed weeks, represent the largest proportion of all preterm infants (71.1 %).

The most recent statistics available from the March of Dimes Peristats (www.marchofdimes.com) indicate that the 2008 preterm birth rate was 12.3 %, an improvement from the 2006 statistics but still above the Healthy People 2020 preterm birth rate goal of 11.4 % of all live births. For the same period, the *late preterm birth* rate was 8.8%, continuing to make up more than 70% of all preterm births.

Factors identified as contributing to the increase in preterm births include increasing maternal age, early inductions and maternal complications such as hypertension, diabetes, obesity, preterm premature rupture of membrane, as well as the increase in multiple births and the rise in infertility treatments.¹

Preterm infants are at much greater risk for mortality or long term morbidity than term infants and represent one of the most significant challenges facing the perinatal community. Complications can include respiratory distress syndrome, intraventricular hemorrhage, necrotizing enterocolitis, and apnea. *Late preterm infants*, while usually healthier than very preterm infants, still have a slightly higher risk of mortality than term infants and may experience breathing and feeding problems and increased risk for hyperbilirubinemia. These issues place them at risk for readmission in the neonatal period.²

In the past few years, *early* term deliveries (37 0/7-38 6/7 weeks) have gotten greater and greater scrutiny - especially those deemed not medically necessary or “elective”.^{3,4} The March of Dimes 2011 Campaign: “Healthy Babies are Worth the Wait” is an example of an effort to reduce medically unnecessary early deliveries. It offers a Toolkit to professionals for eliminating non-medically indicated deliveries before 39 weeks.⁵ The campaign brings attention to all non-medically indicated deliveries across all gestational age groups, but looks most closely at the early term and late preterm infants where the goal of spontaneous delivery “at term” may not be well enforced.

II. Discharge Planning for the Late Preterm Infant

Late preterm infants present a unique challenge with regard to assessment for discharge and post-hospital care planning. Since many present close to term or within a reasonable birth weight range, their discharge is viewed as fairly routine; this is especially true for those infants who remain in the normal nursery during their entire hospital stay. Nevertheless their greater risk for post discharge complications makes discharge planning critical.

In 2006-2007, The American Academy of Pediatrics (AAP) developed guidelines for hospital discharge of the high-risk infants.⁶ These guidelines were reconfirmed in 2010.⁷ Despite the guidelines, a recent

article by Goyal, et al found that in a 10 year, 3 state study, 51.4 percent of late preterm births were discharged early (< 48 hours after birth).⁸

The guidelines address 4 categories of infants: preterm infant; infant with special health care needs or dependence on technology; infant at risk because of family issues; and infant with anticipated early death.

Although there are multiple factors influencing the discharge of a preterm infant, the common elements should include:

- physiologic stability
- an active program of parental involvement and preparation for care of the infant at home
- arrangements for health care after discharge by a physician or other health care professional who is experienced in the care of the high-risk infant
- an organized program of tracking and surveillance to monitor growth and development.

Generally for discharge to occur, the infant must be taking oral feeding to support growth needs, maintain a normal body temperature in the home environment and have sufficient mature respiratory control. Infants born early in gestation and/or with medical complications will take longer to achieve these competencies. While these conditions cannot be totally eliminated, careful discharge planning and close follow-up can reduce the incidence and effect of these problems and avert potential readmissions.

III. Description of Tables and Graphs

In late December, 2010 NPIC/QAS was approved by the American Board of Pediatrics to offer Maintenance of Certification (MOC) Part 4 Credits to neonatologists/pediatricians. In consultation with our Board of Directors neonatologists (Drs. George Little, Dartmouth; Marilyn Escobedo, U. of Oklahoma; Martin McCaffrey, UNC and John Hartline, retired) we decided to focus on the Late Preterm Birth infants (LPB).

The V11.3 Special Report: Late Preterm Births is similar to a report developed for the MOC Part 4 program participants and focuses on your hospital's LPB infants in comparison to the NPIC/QAS Database average rates. *Most of the tables display information for infants with numeric gestational age (GA) and linked to their mothers. If your hospital does not provide numeric GA or linked data we are happy to work with you to submit that data as a supplemental file.*

The Report includes data for **discharge date range 10/1/10 – 9/30/11**. The LPB age group is highlighted on all tables and graphs.

Table 1: Overview: NPIC/QAS Database Distribution of Inborns by Completed Weeks Gestational Age

This table provides a profile of all inborns in the database by completed weeks of gestation. The data displayed only includes member hospitals that provide **numeric gestational age** and a valid mother/baby link on their data submission. The table displays the total number of cases by age category (23 - > 42 completed weeks). The percent of total inborns, the average length of stay (ALOS), percent with special care charges and/or days and average total charge are also shown for each age group.

Graphs 1-4 profile the metrics displayed in Table 1.

Graph 1: Late Preterm Birth Infants, NPIC/QAS Database Distribution of Inborns by Completed Weeks GA

Graph 2: Late Preterm Birth Infants, NPIC/QAS Database Percent of Inborns Admitted to Special Care Nursery by completed weeks GA

Graph 3: Late Preterm Birth Infants, NPIC/QAS Database Inborn Total ALOS by Completed Weeks GA

Graph 4: Late Preterm Birth Infants, NPIC/QAS Database Inborn Average Total Charge by Completed Weeks GA

Table 2: Overview: NPIC/QAS Database Distribution of Inborns by Coded Gestational Age Categories

This table profiles data on the same inborn population included in Table 1; however the gestational age categories follow the ICD 9 CM fifth digit code groupings found on code: *765.2 x- Disorders relating to short gestation and low birthweight*. Cases without a 765.2 code will default to ≥ 37 weeks gestation.

As you will note, coded data does not allow for the degree of specificity seen in the numeric GA data.

Tables 3-5 present hospital specific information or database averages. Each table begins with a display of the total number of deliveries, inborns and linked inborns. Total linked inborns is also displayed as a percent of total inborns. The tables then show inborns with numeric gestational age subdivided into age categories: 22-33, 34-36, 37-38, $>$ or $= 39$ completed weeks, and total. The percent of total is also displayed for each category.

Table 3A: Comparative Analysis of Linked Inborns by Numeric Gestational Age (Hospital)

This table presents a linked inborn analysis which displays length of stay, APR DRG subclass, delivery type and charge information by numeric gestational age category. The analysis only includes cases with a valid mother/baby link and numeric GA.

The first section of the analysis shows the count of linked inborns with numeric GA and the percent of total in each age category.

The **Length of Stay** section provides the average length of stay (ALOS) and LOS range, the percent discharged to home or with home health care and the percent that died.

The section displaying the **APR DRG Subclass Distribution** shows each subclass of complications (minor, moderate, major, extreme and undefined) as a percent of total linked inborns.

The next section of the table, **Delivery Type**, displays the percent of linked inborns whose mother had an induction or c- section delivery. The percent of linked inductions and c- sections with a coded medical indication is also displayed. The coded medical indication is derived from the Joint Commission list of medical “conditions possibly justifying elective delivery prior to 39 weeks” (www.jointcommission.org;

2012B Specifications Manual). We added an additional code to the list: 644.21- Early Onset of Delivery which pertains specifically to spontaneous onset of delivery before 37 completed weeks of gestation.

It is important to note that those without a medical indication are not necessarily “elective” deliveries but rather are without a coded indication from the TJC list.

The Charge analysis presented in the last section provides average total charge and the percent of linked inborns with special care charges/days (NICU and/or NINT).

Table 3B: Comparative Analysis of Linked Inborns by Numeric Gestational Age (Database Average)

This table presents the database averages for the information displayed in Table 3A.

Table 4A: Top Ten Associated Diagnosis Code Category Comparative Analysis of Linked Inborns by Numeric Gestational Age (Hospital)

Table 4A profiles for your hospital the top ten associated diagnosis codes by gestational age category using the database ranking of the top ten codes for 34-36 completed weeks as the reference group. Keeping the same ranking throughout the analysis regardless of GA category allows us to determine how the percent of the reference diagnoses change as the gestational age goes higher or lower. The Table presents your linked inborn population distributed by gestational age category with the count of cases for each diagnosis code, the percent of total and the ALOS.

The top ten associated diagnosis codes are determined by looking at the first associated diagnosis position on each record. Generally the principal diagnosis on all inborn records is a V3x.0x code which only identifies the case as an inborn, singleton/ twin or other multiple, delivered vaginally or by c-section, therefore any complications or co-morbidities are not registered in the principal position. We use the first associated diagnosis position to assess clinical diagnoses resulting in a much more robust picture of the range of complications for the reference group.

Table 4B: Top Ten Associated Diagnosis Code Category Comparative Analysis of Linked Inborns by Numeric Gestational Age (Database Average)

This table presents the database averages for the information displayed in Table 4A.

Table 5: Readmission Comparative Analysis of Linked Inborns by Numeric Gestational Age

This table displays data on linked inborn readmissions by gestational age category, first for your hospital and then for the NPIC/QAS database. The table shows the total number of inborns discharged to home or with home health care, the count of these cases as a percentage of total inborns, and the total number and percent of cases readmitted to your hospital within 28 days. Readmissions are further subdivided into the percent readmitted within 7 days, 8-14 days, 15-21 days and 22-28 days.

Questions regarding this analysis should be directed to Sandra Boyle, Director of Membership Services (sboyle@npic.org) or Annemarie D’Abrosca, Senior Analyst/Hospital Liaison (adabrosca@npic.org) at 401-274-0650.

REFERENCES

1. Iams, J.D. The Epidemiology of Preterm Birth. *Clinics in Perinatology*. Volume 30, 2003, pages 651-654.
2. Tomashek, K., et al. Differences in Mortality Between Late-Preterm and Term Singleton Infants in the United States. *Journal of Pediatrics*, Volume 1, November, 2007, pages 450-456.
3. American College of Obstetricians and Gynecologists (ACOG). Cesarean Delivery on Maternal Request. *ACOG Committee Opinion*, number 394, December, 2007.
4. American College of Obstetricians and Gynecologists (ACOG). Cesarean Delivery on Maternal Request. *ACOG Practice Bulletin*, number 10, November, 1999.
5. “Elimination of Non-Medically Indicated (Elective) Deliveries Before 39 Weeks Gestational Age”. *A California Toolkit to Transform Maternity Care, Collaborative Project Developed by March of Dimes, California Maternal and Quality Care Collaborative and Maternal/ Child and Adolescent Health Division*; Center for Family Health, California Department of Public Health, October, 2010.
6. American Academy of Pediatrics. Hospital Discharge for the High-Risk Neonate, Committee on Fetus and Newborn Policy Statement. *Pediatrics*, Volume, 122. Number 5, November, 2008.
7. American Academy of Pediatrics Committee on Fetus and Newborn. (2010). Policy Statement: Hospital Stay for Healthy Term Newborns. *Pediatrics*, 125(2) 405-209.
8. Goyal, NK, et al. Adherence to Discharge Guidelines for Late-Preterm Newborns”. July, 2011 *Pediatrics*, 128(1), pp. 62-71.

NPIC/QAS has an extensive list of additional LPB references which we are happy to provide to you. Please email mocpart4@npic.org and we will send you the list.

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**Table 1 - Overview: NPIC/QAS Database Distribution of Inborns by Completed Weeks Gestational Age*
FY 2011 (10/01/2010 - 09/30/2011)****

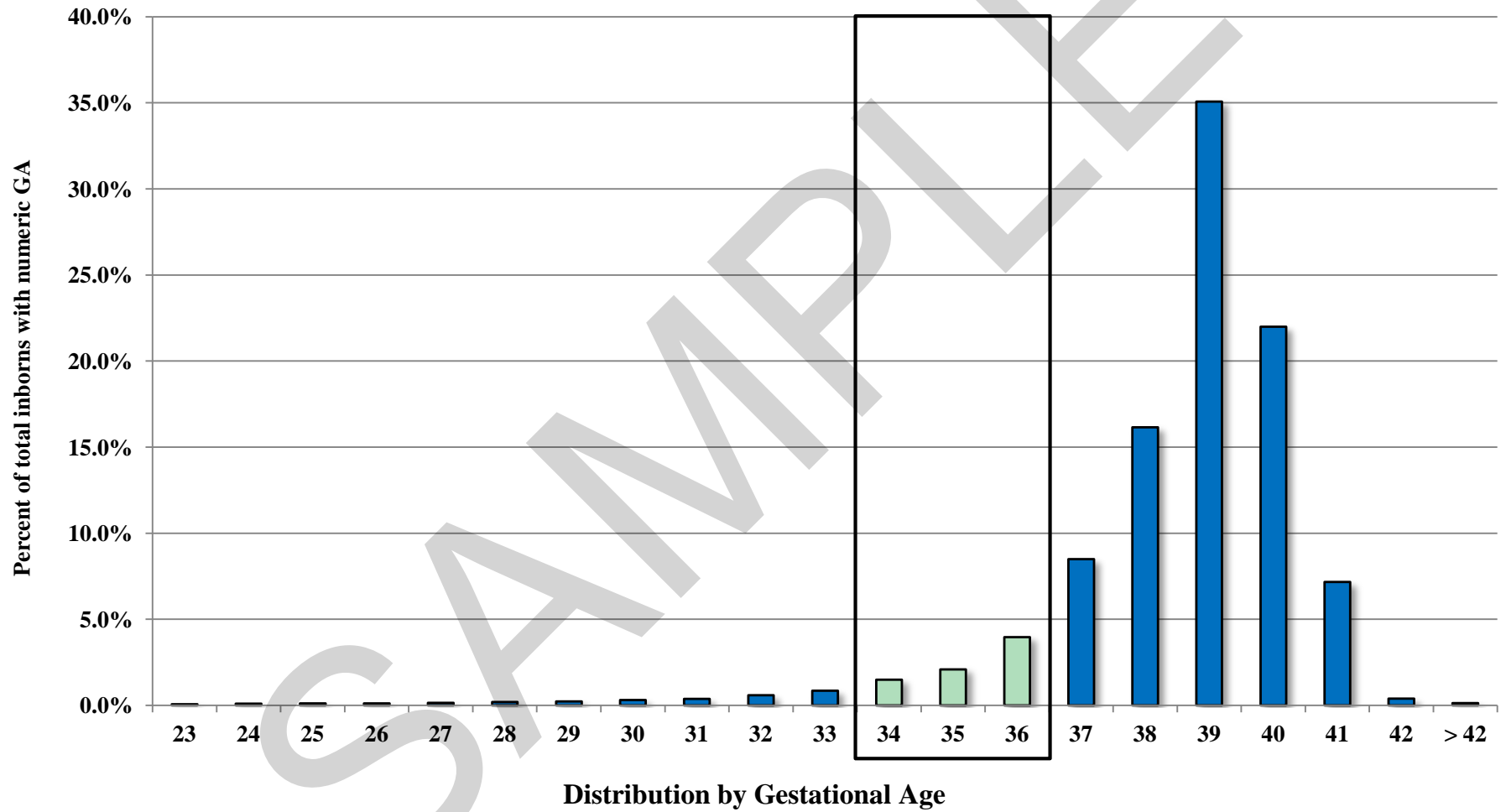
GA Completed Weeks	Total	Percent of total inborns	ALOS	% with Special Care charges/days ***	Average Total Charge
23 Completed Weeks	131	0.1%	17.2	60.3%	\$156,518
24 Completed Weeks	194	0.1%	47.8	88.7%	\$379,982
25 Completed Weeks	203	0.1%	60.4	95.1%	\$418,678
26 Completed Weeks	201	0.1%	58.7	95.0%	\$415,867
27 Completed Weeks	265	0.1%	61.9	98.1%	\$378,337
28 Completed Weeks	351	0.2%	54.0	94.9%	\$288,197
29 Completed Weeks	421	0.2%	48.5	97.6%	\$276,430
30 Completed Weeks	575	0.3%	39.9	94.6%	\$215,410
31 Completed Weeks	697	0.4%	31.4	98.1%	\$160,934
32 Completed Weeks	1,097	0.6%	24.6	95.9%	\$121,698
33 Completed Weeks	1,598	0.9%	17.8	96.4%	\$86,683
34 Completed Weeks	2,797	1.5%	12.7	93.8%	\$61,097
35 Completed Weeks	3,921	2.1%	6.5	55.3%	\$28,865
36 Completed Weeks	7,441	4.0%	4.1	30.3%	\$15,977
37 Completed Weeks	15,968	8.5%	3.1	15.0%	\$9,253
38 Completed Weeks	30,354	16.2%	2.6	8.8%	\$6,821
39 Completed Weeks	65,897	35.1%	2.6	7.0%	\$5,812
40 Completed Weeks	41,331	22.0%	2.4	7.7%	\$5,832
41 Completed Weeks	13,458	7.2%	2.5	9.0%	\$6,244
42 Completed Weeks	722	0.4%	2.5	12.7%	\$7,229
> 42 Completed Weeks	241	0.1%	4.3	12.4%	\$18,278
All age categories combined	187,863	100.0%	3.8	14.2%	\$13,780
Numeric Gestational Age not provided	5,914	3.1%	8.2	27.5%	\$39,449

* Uses numeric gestational age data only

** Only includes member hospitals that provide numeric GA and a valid mother/baby link (n = 43)

*** Special Care discharges are those having NICU or NINT days > 0 and/or NICU or NINT charges > 0

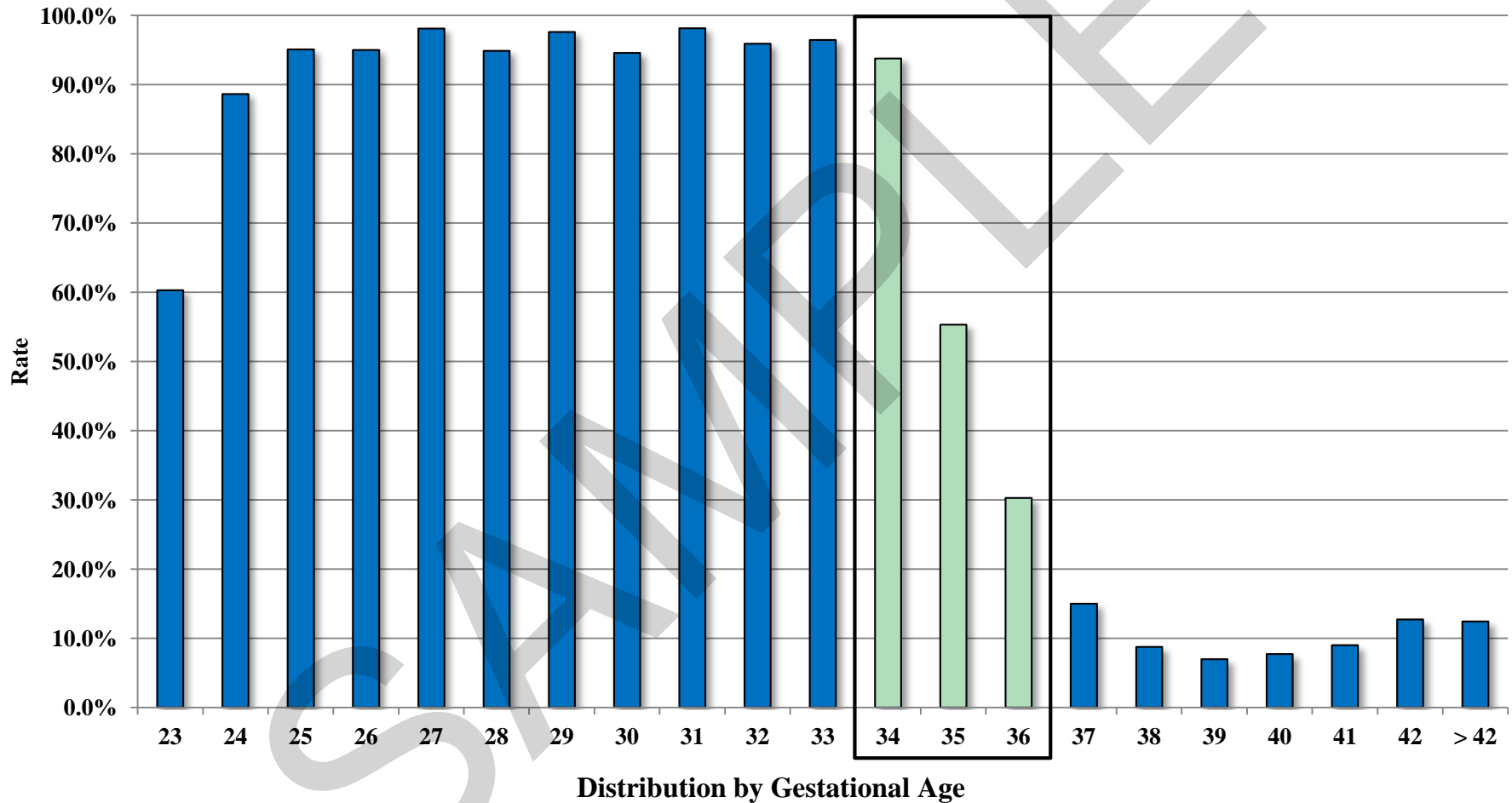
Graph 1: Late Preterm Birth Infants
NPIC/QAS Database Distribution of Inborns by Completed Weeks Gestational Age
FY 2011 (10/01/2010 - 09/30/2011) *



* Only includes member hospitals that provide numeric GA and a valid mother/baby link (n = 43).

**34-36 weeks GA = 7.5% of
 187,863 inborns with numeric GA**

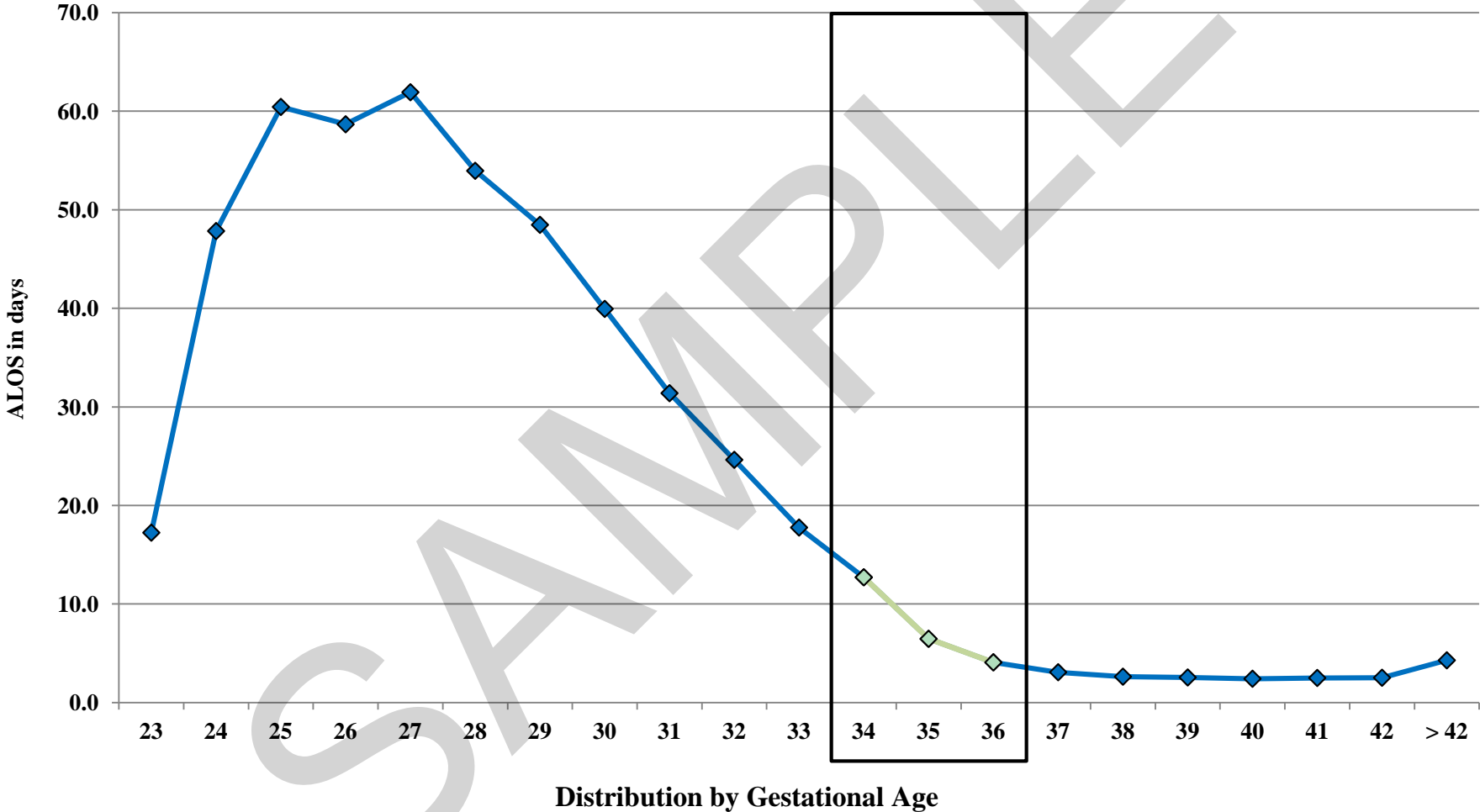
Graph 2: Late Preterm Birth Infants
NPIC/QAS Database Percent of Inborns Admitted to Special Care Nursery by completed weeks Gestational Age
FY 2011 (10/01/2010 - 09/30/2011) *



* Only includes member hospitals that provide numeric GA and a valid mother/baby link (n = 43).

**Percent of inborns 34-36 weeks GA
 admitted to special care nursery: 49.8%**

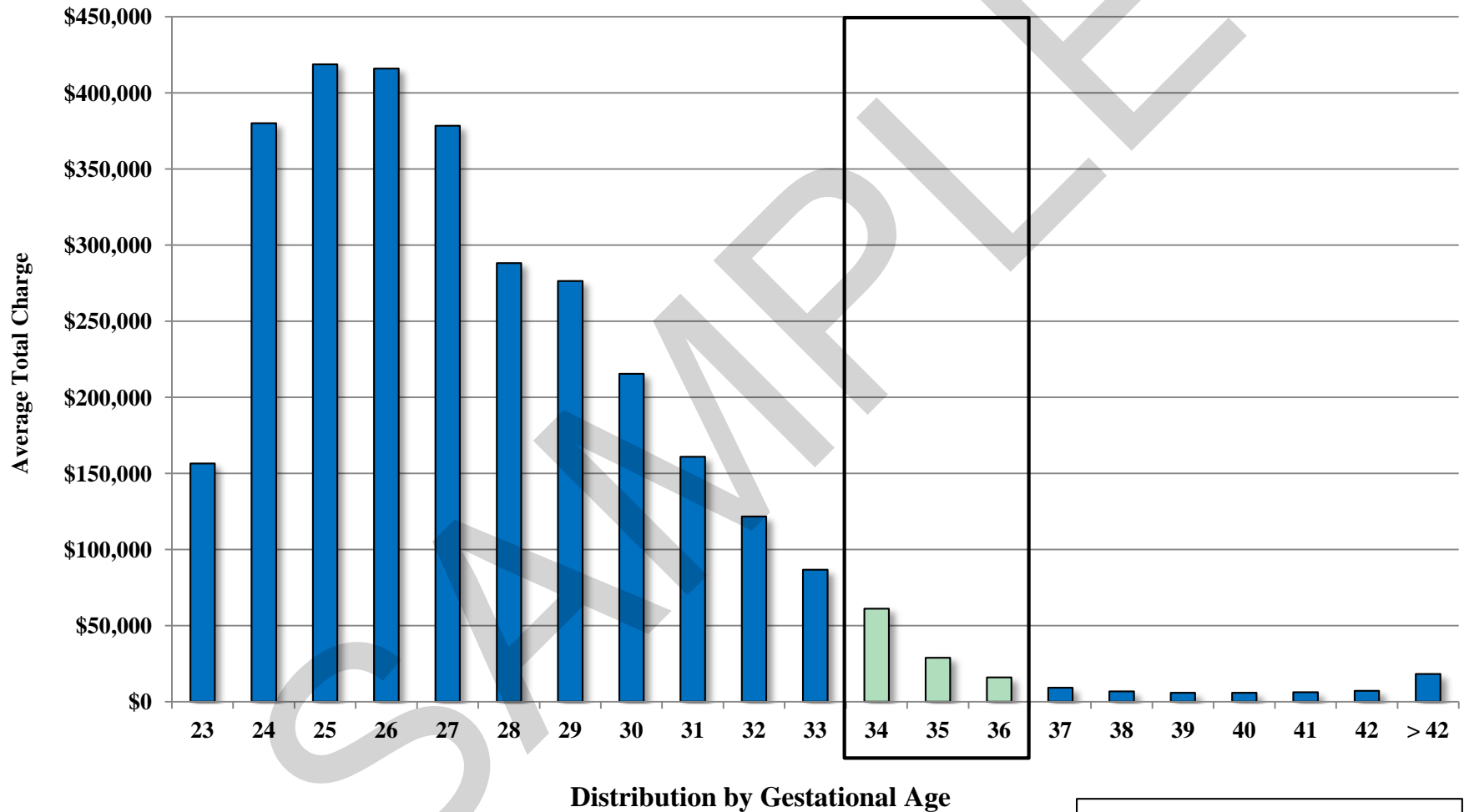
Graph 3: Late Preterm Birth Infants
NPIC/QAS Database Inborn Total ALOS by completed weeks Gestational Age
FY 2011 (10/01/2010 - 09/30/2011) *



* Only includes member hospitals that provide numeric GA and a valid mother/baby link (n = 43).

**Total ALOS for inborns
 34-36 weeks GA: 6.4**

Graph 4: Late Preterm Birth Infants
NPIC/QAS Database Inborn Average Total Charge by completed weeks Gestational Age
FY 2011 (10/01/2010 - 09/30/2011) *



* Only includes member hospitals that provide numeric GA and a valid mother/baby link (n = 43).

Average Total Charge for inborns 34-36 weeks GA: \$27,200

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**Table 2 - Overview: NPIC/QAS Database Distribution of Inborns by Coded Gestational Age Categories*
FY 2011 (10/01/2010 - 09/30/2011)****

GA Completed Weeks	Total	Percent of total inborns	ALOS	% with Special Care charges/days ***	Average Total Charge
< 24 Completed Weeks	457	0.2%	8.8	27.8%	\$69,941
24 Completed Weeks	228	0.1%	49.5	87.3%	\$378,815
25-26 Completed Weeks	472	0.2%	61.8	95.6%	\$419,974
27-28 Completed Weeks	711	0.4%	58.6	96.2%	\$328,610
29-30 Completed Weeks	1,112	0.6%	43.8	96.2%	\$237,425
31-32 Completed Weeks	1,949	1.0%	27.6	97.0%	\$138,012
33-34 Completed Weeks	4,702	2.4%	14.6	95.0%	\$70,713
35-36 Completed Weeks	11,759	6.1%	5.0	39.4%	\$20,758
≥ 37 Completed Weeks	172,364	89.0%	2.6	8.6%	\$6,572
All age categories combined	193,754	100.0%	4.0	14.6%	\$14,571
Unspecified (765.20)	23	0.0%	2.1	0.0%	\$2,520

* Uses both numeric and coded gestational age data

** Only includes member hospitals that provide numeric GA and a valid mother/baby link (n = 43)

*** Special Care discharges are those having NICU or NINT days > 0 and/or NICU or NINT charges > 0

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Table 3A: Comparative Analysis of Linked Inborns by Numeric Gestational Age

NPIC ID: SAMPLE	Numeric Gestational Age Category				
	23-33 completed weeks	34-36 completed weeks (Reference Group)	37-38 completed weeks	≥ 39 completed weeks	Total
Total Deliveries: 3,109					
Total Inborns: 3,162					
Total Linked Inborns: 3,103 (98.1% of Total Inborns)					
Total inborns with numeric gestational age	100	250	851	1,954	3,155
% of Total inborns with numeric gestational age	3.2%	7.9%	27.0%	61.9%	100.0%

LINKED INBORN ANALYSIS:

Total Linked Inborns with numeric gestational age *	81	232	842	1,941	3,096
% of Total Linked Inborns with numeric gestational age	2.6%	7.5%	27.2%	62.7%	100.0%
Length of Stay analysis					
ALOS	29.6	8.0	3.3	2.6	3.9
LOS range	1 - 78	1 - 49	1 - 77	1 - 31	1 - 78
% Discharged home/with home health	79.0%	97.8%	99.3%	99.9%	99.0%
% died	8.6%	1.3%	0.4%	0.1%	0.5%
APR DRG Subclass Distribution (% of total linked inborns)					
Subclass 1 Minor complications	8.6%	31.5%	64.4%	69.6%	63.7%
Subclass 2 Moderate complication	32.1%	37.9%	23.5%	22.5%	24.2%
Subclass 3 Major complications	39.5%	26.7%	10.2%	7.4%	10.4%
Subclass 4 Extreme complications	19.8%	3.9%	1.9%	0.6%	1.7%
APR DRG Subclass undefined	0.0%	0.0%	0.0%	0.0%	0.0%
Delivery Type					
% of linked inborns delivered to a mother with an induction code	11.1%	13.4%	18.9%	26.2%	22.8%
% of linked inductions with a medical indication ¹	100.0%	96.8%	86.2%	87.8%	88.0%
% of linked inborns delivered to a mother with a c-section	69.1%	52.2%	35.2%	25.1%	31.0%
% of linked c-sections with a medical indication ¹	100.0%	99.2%	71.6%	63.7%	72.7%
Charge analysis					
Average Total charge	\$485,331	\$111,723	\$32,386	\$18,340	\$41,375
Percent with Special care charges/days (NICU and/or NINT)	98.8%	51.3%	13.9%	11.7%	17.5%

* Only cases with a valid mother/baby link and numeric GA are included in this analysis.

¹ Medical indication is determined using The Joint Commission code list of Conditions Possibly Justifying Elective Delivery Prior to 39 Weeks from Manual 2012B. Cases less than 37 weeks also include code 644.21 (Early Onset of Delivery).

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Table 3B: Comparative Analysis of Linked Inborns by Numeric Gestational Age

Database Average	Numeric Gestational Age Category				
	23-33 completed weeks	34-36 completed weeks (Reference Group)	37-38 completed weeks	≥ 39 completed weeks	Total
Total Deliveries: 4,597					
Total Inborns: 4,684					
Total Linked Inborns: 4,525 (96.6% of Total Inborns)					
Total inborns with numeric gestational age	149	338	1,100	2,860	4,447
% of Total inborns with numeric gestational age	3.1%	7.3%	24.7%	64.9%	100.0%

LINKED INBORN ANALYSIS:

Total Linked Inborns with numeric gestational age *	131	328	1,082	2,819	4,361
% of Total Linked Inborns with numeric gestational age	2.8%	7.3%	24.7%	65.2%	100.0%
Length of Stay analysis					
ALOS	27.6	6.1	2.7	2.4	3.6
LOS range	1 - 212	1 - 151	1 - 120	1 - 150	1 - 212
% Discharged home/with home health	79.4%	97.1%	98.9%	99.4%	98.6%
% died	5.1%	0.4%	0.1%	0.0%	0.2%
APR DRG Subclass Distribution (% of total linked inborns)					
Subclass 1 Minor complications	19.3%	49.3%	78.0%	81.0%	76.1%
Subclass 2 Moderate complication	33.7%	29.5%	16.8%	15.5%	17.4%
Subclass 3 Major complications	31.7%	18.6%	4.5%	3.1%	5.4%
Subclass 4 Extreme complications	12.6%	1.1%	0.4%	0.2%	0.7%
APR DRG Subclass undefined	2.7%	1.6%	0.4%	0.3%	0.4%
Delivery Type					
% of linked inborns delivered to a mother with an induction code	6.8%	14.0%	16.0%	25.7%	21.9%
% of linked inductions with a medical indication ¹	97.3%	96.9%	83.7%	72.9%	75.8%
% of linked inborns delivered to a mother with a c-section	61.7%	48.7%	34.9%	32.6%	35.3%
% of linked c-sections with a medical indication ¹	98.1%	95.5%	66.2%	51.7%	61.9%
Charge analysis					
Average Total charge	\$161,805	\$27,300	\$7,511	\$5,860	\$12,830
Percent with Special care charges/days (NICU and/or NINT)	94.0%	51.1%	11.6%	8.1%	14.5%

* NPIC/QAS Database Averages only include member hospitals that provide numeric GA, a valid mother/baby link, and cases within the designated age category.

¹ Medical indication is determined using The Joint Commission code list of Conditions Possibly Justifying Elective Delivery Prior to 39 Weeks from Manual 2012B. Cases less than 37 weeks also include code 644.21 (Early Onset of Delivery).

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Table 4A: Top Ten Associated Diagnosis Code Categories Comparative Analysis of Linked Inborns by Numeric Gestational Age

NPIC ID: SAMPLE	Numeric Gestational Age Category														
	23-33 completed weeks			34-36 completed weeks (Reference Group)			37-38 completed weeks			≥ 39 completed weeks			Total		
Total Deliveries: 3,109 Total Inborns: 3,162 Total Linked Inborns: 3,103 (98.1% of Total Inborns)	Count	% of total	ALOS	Count	% of total	ALOS	Count	% of total	ALOS	Count	% of total	ALOS	Count	% of total	ALOS
Diagnosis Code Categories: ranked by Database 34-36 completed weeks (Reference Group) average in descending order *															
1.) 774.xx - Other perinatal jaundice	2	2.5%	16.5	30	12.9%	4.3	110	13.1%	2.8	200	10.3%	2.4	342	11.0%	2.8
2.) 770.xx - Other respiratory conditions of fetus and newborn	3	3.7%	19.0	35	15.1%	8.9	57	6.8%	3.3	136	7.0%	3.3	231	7.5%	4.4
3.) 775.xx - Endocrine and metabolic disturbances specific to the fetus and newborn	5	6.2%	29.0	19	8.2%	8.6	21	2.5%	4.3	42	2.2%	2.8	87	2.8%	6.0
4.) 769 - Respiratory distress syndrome	49	60.5%	35.5	21	9.1%	15.7	1	0.1%	9.0	1	0.1%	2.0	72	2.3%	28.9
5.) V29.xx - Observation and evaluation of newborns and infants for suspected condition not found	0	0.0%	0.0	15	6.5%	2.9	33	3.9%	2.4	63	3.2%	2.4	111	3.6%	2.4
6.) 779.xx - Other and ill-defined conditions originating in the perinatal period	1	1.2%	1.0	19	8.2%	7.5	78	9.3%	2.6	246	12.7%	2.4	344	11.1%	2.7
7.) 771.xx - Infections specific to the perinatal period	4	4.9%	26.5	15	6.5%	16.5	14	1.7%	8.4	58	3.0%	5.6	81	2.6%	7.5
8.) 764.xx - Slow fetal growth and fetal malnutrition	0	0.0%	0.0	5	2.2%	11.2	25	3.0%	2.2	9	0.5%	2.1	35	1.1%	2.2
9.) 776.xx - Hematological disorders of newborn	8	9.9%	27.0	1	0.4%	4.0	6	0.7%	7.5	7	0.4%	4.9	36	1.2%	15.1
10.) 773.xx - Hemolytic diseases of fetus or newborn, due to isoimmunization	0	0.0%	0.0	1	0.4%	2.0	0	0.0%	0.0	1	0.1%	1.0	2	0.1%	1.5
Top 10 Predetermined Dx Codes Subtotal	72	88.9%	31.9	161	69.4%	8.9	345	41.0%	3.2	763	39.3%	2.9	1,341	43.3%	5.2
Cases with only V3x.xx or (V3x.xx and 765.xx)	0	0.0%	0.0	1	0.4%	2.0	3	0.4%	2.0	8	0.4%	1.9	12	0.4%	1.9
All Other diagnosis codes	9	11.1%	10.6	70	30.2%	6.2	494	58.7%	3.4	1,170	60.3%	2.5	1,743	56.3%	2.9
Hospital Total	81		29.6	232		8.0	842		3.3	1,941		2.6	3,096		3.9

* Only cases with a valid mother/baby link and numeric GA are included in this analysis.

Please refer to the Glossary at the end of this report for the complete list of codes within each diagnosis category.

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Table 4B: Top Ten Associated Diagnosis Code Categories Comparative Analysis of Linked Inborns by Numeric Gestational Age

Database Average	Numeric Gestational Age Category														
	23-33 completed weeks			34-36 completed weeks (Reference Group)			37-38 completed weeks			≥ 39 completed weeks			Total		
Total Deliveries: 4,597 Total Inborns: 4,684 Total Linked Inborns: 4,525 (96.6% of Total Inborns)	Count	% of total	ALOS	Count	% of total	ALOS	Count	% of total	ALOS	Count	% of total	ALOS	Count	% of total	ALOS
Diagnosis Code Categories: ranked by Database 34-36 completed weeks (Reference Group) average in descending order *															
1.) 774.xx - Other perinatal jaundice	9	7.0%	13.4	52	15.7%	5.3	104	9.6%	2.7	228	8.1%	2.6	393	9.0%	3.6
2.) 770.xx - Other respiratory conditions of fetus and newborn	20	15.4%	25.4	35	10.6%	8.1	41	3.8%	4.0	88	3.1%	3.5	181	4.2%	7.0
3.) 775.xx - Endocrine and metabolic disturbances specific to the fetus and newborn	5	4.0%	16.9	21	6.3%	7.0	26	2.4%	4.0	37	1.3%	3.4	88	2.0%	5.6
4.) 769 - Respiratory distress syndrome	46	34.9%	32.5	19	5.7%	11.7	4	0.4%	6.8	5	0.2%	6.7	72	1.7%	24.3
5.) V29.xx - Observation and evaluation of newborns and infants for suspected condition not found	1	0.9%	4.9	17	5.0%	3.5	56	5.2%	2.4	137	4.9%	2.4	212	4.9%	2.7
6.) 779.xx - Other and ill-defined conditions originating in the perinatal period	2	1.8%	12.6	14	4.2%	7.3	46	4.2%	4.5	135	4.8%	3.5	197	4.5%	4.4
7.) 771.xx - Infections specific to the perinatal period	9	7.0%	28.2	10	3.1%	10.6	12	1.1%	5.9	26	0.9%	6.4	57	1.3%	13.4
8.) 764.xx - Slow fetal growth and fetal malnutrition	1	0.9%	9.4	8	2.5%	5.4	25	2.3%	3.1	20	0.7%	2.5	54	1.2%	3.9
9.) 776.xx - Hematological disorders of newborn	9	6.7%	26.0	6	1.9%	12.1	3	0.3%	5.8	3	0.1%	3.9	22	0.5%	16.5
10.) 773.xx - Hemolytic diseases of fetus or newborn, due to isoimmunization	1	0.5%	8.0	4	1.1%	5.4	14	1.3%	3.1	36	1.3%	2.8	54	1.2%	3.6
Top 10 Dx Codes Subtotal	103	79.1%	28.2	185	56.2%	7.6	330	30.5%	3.4	715	25.4%	3.0	1,331	30.5%	6.0
Cases with only V3x.xx or (V3x.xx and 765.xx)	3	2.4%	1.7	42	12.8%	2.6	249	23.0%	2.2	660	23.4%	2.1	957	21.9%	2.2
All Other diagnosis codes	24	18.5%	23.6	102	31.0%	4.7	503	46.5%	2.6	1,444	51.2%	2.3	2,073	47.5%	2.9
Database Average	131		27.6	328		6.1	1,082		2.7	2,819		2.4	4,361		3.6

* NPIC/QAS Database Averages only include member hospitals that provide numeric GA, a valid mother/baby link, and cases within the designated age category. Please refer to the Glossary at the end of this report for the complete list of codes within each diagnosis category.

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Table 5: Readmission Comparative Analysis of Linked Inborns by Numeric Gestational Age

NPIC ID: SAMPLE	Numeric Gestational Age Category				
Total Deliveries: 3,109 Total Inborns: 3,162 Total Linked Inborns: 3,103 (98.1% of Total Inborns)	23-33 completed weeks	34-36 completed weeks (Reference Group)	37-38 completed weeks	≥ 39 completed weeks	Total
Total Linked Inborns with numeric gestational age *	81	232	842	1,941	3,096
Total Linked Inborns with numeric gestational age discharged to home/under home health care	64	227	836	1,939	3,066
% of Total Linked Inborns	79.0%	97.8%	99.3%	99.9%	99.0%
Of Those Discharged to home/under home health care:					
Total Readmitted to this hospital within 28 days	0	13	45	57	115
% Readmitted to this hospital within 28 days	0.0%	5.7%	5.4%	2.9%	3.8%
% readmitted to this hospital within 7 days	0.0%	61.5%	66.7%	68.4%	67.0%
% readmitted to this hospital within 8-14 days	0.0%	23.1%	15.6%	8.8%	13.0%
% readmitted to this hospital within 15-21 days	0.0%	15.4%	11.1%	12.3%	12.2%
% readmitted to this hospital within 22-28 days	0.0%	0.0%	6.7%	10.5%	7.8%

* Only cases with a valid mother/baby link and numeric GA are included in this analysis.

Database Average	Numeric Gestational Age Category				
Total Deliveries: 4,597 Total Inborns: 4,684 Total Linked Inborns: 4,525 (96.6% of Total Inborns)	23-33 completed weeks	34-36 completed weeks (Reference Group)	37-38 completed weeks	≥ 39 completed weeks	Total
Total Linked Inborns with numeric gestational age **	131	328	1,082	2,819	4,361
Total Linked Inborns with numeric gestational age discharged to home/under home health care	108	320	1,072	2,805	4,307
% of Total Linked Inborns	77.6%	97.1%	98.9%	99.4%	98.6%
Of Those Discharged to home/under home health care:					
Total Readmitted to this hospital within 28 days	1	6	17	20	41
% Readmitted to this hospital within 28 days	1.4%	1.9%	1.7%	0.9%	1.0%
% readmitted to this hospital within 7 days	61.1%	83.4%	76.0%	71.7%	76.3%
% readmitted to this hospital within 8-14 days	38.9%	6.8%	9.3%	11.7%	9.3%
% readmitted to this hospital within 15-21 days	0.0%	9.5%	8.4%	11.2%	9.5%
% readmitted to this hospital within 22-28 days	0.0%	0.3%	6.3%	5.4%	4.9%

** NPIC/QAS Database Averages only include member hospitals that provide numeric GA, a valid mother/baby link, and cases within the designated age category.

GLOSSARY OF DIAGNOSIS CODES (present in V11.3 NPIC/QAS database):

764.xx - Slow fetal growth and fetal malnutrition includes the following codes:

- 764.04 - "light-for-dates" without mention of fetal malnutrition, 1000-1249 grams
- 764.05 - "light-for-dates" without mention of fetal malnutrition, 1250-1499 grams
- 764.06 - "light-for-dates" without mention of fetal malnutrition, 1500-1749 grams
- 764.07 - "light-for-dates" without mention of fetal malnutrition, 1750-1999 grams
- 764.08 - "light-for-dates" without mention of fetal malnutrition, 2000-2499 grams
- 764.09 - "light-for-dates" without mention of fetal malnutrition, 2500+ grams
- 764.16 - "light-for-dates" with signs of fetal malnutrition, 1500-1749 grams
- 764.17 - "light-for-dates" with signs of fetal malnutrition, 1750-1999 grams
- 764.18 - "light-for-dates" with signs of fetal malnutrition, 2000-2499 grams
- 764.28 - Fetal malnutrition without mention of "light-for-dates", 2000-2499 grams
- 764.90 - Fetal growth retardation, unspecified
- 764.94 - Fetal growth retardation, unspecified 1000-1249 grams
- 764.95 - Fetal growth retardation, unspecified 1250-1499 grams
- 764.96 - Fetal growth retardation, unspecified 1500-1749 grams
- 764.97 - Fetal growth retardation, unspecified 1750-1999 grams
- 764.98 - Fetal growth retardation, unspecified 2000-2499 grams
- 764.99 - Fetal growth retardation, unspecified 2500+ grams

770.xx - Other respiratory conditions of fetus and newborn includes the following codes:

- 770.0 - Congenital pneumonia
- 770.10 - Fetal and newborn aspiration, unspecified
- 770.11 - Meconium aspiration without respiratory symptoms
- 770.12 - Meconium aspiration with respiratory symptoms
- 770.14 - Aspiration of clear amniotic fluid without respiratory symptoms
- 770.16 - Aspiration of blood with respiratory symptoms
- 770.17 - Other fetal and newborn aspirations without respiratory symptoms
- 770.18 - Other fetal and newborn aspiration with respiratory symptoms
- 770.2 - Interstitial emphysema and related conditions
- 770.3 - Pulmonary hemorrhage
- 770.4 - Primary atelectasis
- 770.5 - Other and unspecified atelectasis
- 770.6 - Transitory tachypnea of newborn
- 770.7 - Chronic respiratory disease arising in the perinatal period
- 770.81 - Primary apnea of newborn
- 770.82 - Other apnea of newborn
- 770.83 - Cyanotic attacks of newborn
- 770.84 - Respiratory failure of newborn
- 770.87 - Respiratory arrest of newborn
- 770.88 - Hypoxemia of newborn
- 770.89 - Other respiratory problems after birth

771.xx - Infections specific to the perinatal period includes the following codes:

- 771.1 - Congenital cytomegalovirus infection
- 771.2 - Other congenital infections
- 771.4 - Omphalitis of the newborn
- 771.6 - Neonatal conjunctivitis and dacryocystitis
- 771.7 - Neonatal candida infection

- 771.81 - Septicemia (Sepsis) of newborn
- 771.82 - Urinary tract infection of newborn
- 771.83 - Bacteremia of newborn
- 771.89 - Other infection specific to the perinatal period

773.xx - Hemolytic diseases of fetus or newborn, due to isoimmunization includes the following codes:

- 773.0 - Hemolytic disease due to Rh isoimmunization
- 773.1 - Hemolytic disease due to ABO isoimmunization
- 773.2 - Hemolytic disease due to other and unspecified isoimmunization

774.xx - Other perinatal jaundice includes the following codes:

- 774.2 - Neonatal jaundice associated with preterm delivery
- 774.39 - Other jaundice due to delayed conjunction
- 774.6 - Unspecified fetal and neonatal jaundice

775.xx - Endocrine and metabolic disturbances specific to the fetus and newborn includes the following codes:

- 775.0 - Syndrome of "infant of a diabetic mother"
- 775.2 - Neonatal myasthenia gravis
- 775.3 - Neonatal thyrotoxicosis
- 775.4 - Hypocalcemia and hypomagnesemia of newborn
- 775.5 - Other transitory neonatal electrolyte disturbances
- 775.6 - Neonatal hypoglycemia
- 775.7 - Late metabolic acidosis of newborn
- 775.81 - Other acidosis of newborn
- 775.89 - Other neonatal endocrine and metabolic disturbances

776.xx - Hematological disorders of newborn includes the following codes:

- 776.1 - Transient neonatal thrombocytopenia
- 776.2 - Disseminated intravascular coagulation in newborn
- 776.4 - Polycythemia neonatorum
- 776.5 - Congenital anemia
- 776.6 - Anemia of prematurity
- 776.7 - Transient neonatal neutropenia

779.xx - Other and ill-defined conditions originating in the perinatal period includes the following codes:

- 779.0 - Convulsions in newborn
- 779.2 - Cerebral depression, coma, and other abnormal cerebral signs
- 779.3 - Disorder of stomach function and feeding problems in newborn
- 779.31 - Feeding problems in newborn
- 779.32 - Bilious vomiting in newborn
- 779.33 - Other vomiting in newborn
- 779.34 - Failure to thrive in newborn
- 779.5 - Drug withdrawal syndrome in newborn
- 779.7 - Periventricular leukomalacia
- 779.81 - Neonatal bradycardia
- 779.82 - Neonatal tachycardia
- 779.84 - Meconium staining
- 779.85 - Cardiac arrest of newborn
- 779.89 - Other specified conditions originating in the perinatal period

V29.xx - Observation and evaluation of newborns and infants for suspected condition not found includes the following codes:

V29.0 - Observation for suspected infectious condition

V29.2 - Observation for suspected respiratory condition

V29.3 - Observation for suspected genetic or metabolic condition

V29.8 - Observation for other specified suspected condition

SAMPLE