

Vermont Oxford Network
2007 Expanded Quality Management Report

Introduction

Table of Contents

Introduction

Section 1 Key Performance Measures

Section 2 Characteristics, Interventions and Outcomes
by Birth Weight

Section 3 Characteristics, Interventions and Outcomes
by Gestational Age

Section 4 Characteristics, Interventions and Outcomes
by Birth Location

Section 5 Lists of Infants with Selected Characteristics,
Interventions and Outcomes

Section 6 Disposition Status, Mortality, and Morbidity
among Surviving Infants

Section 7 Length of Stay

Section 8 Trends from 2001 to 2007

Section 9 Final Quarterly Report and Data Completeness Report

Introduction

The Vermont Oxford Network 2007 Expanded Quality Management Report includes information on characteristics, outcomes and interventions for all eligible infants who were born between January 1 and December 31, 2007, at your center or at other Expanded Data Centers. Eligible infants are those who were admitted for neonatal intensive care or who died within 28 days of birth. During 2007, data for more than 89,000 eligible infants were collected at over 200 Expanded Data Centers. Data for all Expanded Data Centers combined are presented in the Vermont Oxford Network Annual Expanded Database Summary for 2007, published separately.

The figures and tables in each section are preceded by a brief explanation. Center-specific data are presented and compared to data collected at all neonatal intensive care units participating in the Vermont Oxford Network Expanded Database. A separate report is prepared for those centers participating in the very low birth weight (VLBW) database, which includes information for infants with birth weights between 401 and 1500 grams or between 22 and 29 weeks gestational age.

Please note that unless otherwise stated, the figures and tables do not include infants for whom data are missing. For example, most of the items on the Network data forms are not applicable for infants who die in the delivery room; the tables and figures by gestational age are restricted to cases where gestational age is known; the tables which report hypoxic-ischemic encephalopathy only include infants of 36 weeks gestation or more. To clarify the number of infants for whom the measures are applicable, the first table in several of the sections include a table which shows the denominators (N) for the various categories of measures.

When interpreting the data included in this report, it is important to keep in mind that the rates and other statistics presented for your NICU can vary from those at other NICUs for a number of reasons, even when there are no true differences in the quality or appropriateness of care. First, the total number of infants at individual NICUs may be relatively small. As a result, random variation can result in large differences in estimated rates even when no true differences exist. Second, there may be differences among NICUs in the types of cases they treat. These differences in case mix would be expected to result in differences in patient outcomes among NICUs. This report attempts to account for case mix and random variation in several ways:

- (1) Outcomes and interventions are reported by birth weight, gestational age and birth location categories. For very low birth weight infants these variables are highly associated with risks for morbidity and mortality.
- (2) Standardized morbidity and mortality ratios (SMRs) and their 95% confidence intervals are reported for key outcomes in Table 1.4 and Figure 1.1 for all eligible infants who were born at Expanded Data Centers between 2005 and 2007. Table 1.5 and Figure 1.9 report the same results for all eligible infants who were born at Expanded Data Centers in 2007. The SMR is the ratio of the number of observed cases (O) to the number of expected cases (E), where the number of expected cases is based on a multivariable risk adjustment model. Each of the SMRs and its confidence interval has been corrected or “shrunk” using methods which recognize that some of the observed variation is random “noise”, particularly for small hospitals. The shrunk values are more stable estimates because they are adjusted for imprecise estimates (small N's) and filter random variation.
- (3) Measures of the number of observed cases minus the number of expected cases (O-E) for infants who were born between 2005 and 2007 are reported in Table 1.4 and Figures 1.2 to 1.8 for the key outcomes. As for the SMRs in Figure 1.1, the number of expected cases is based on a multivariable risk adjustment model, and the O-E values have been corrected to filter random variation. Similar results for infants born in 2007 are reported in Table 1.5 and Figures 1.10 to 1.16.
- (4) For adjusted Total Hospital Stay and its 95% confidence limit in surviving infants (Section 7), a multivariable risk adjustment model is used to adjust for case mix differences among units.

It is important to recognize that these risk adjustment methods are imperfect and cannot adjust for all of the differences in case mix among NICUs. Given these caveats, it is appropriate to use the data in this report to target specific clinical practices and patient outcomes for further in-depth analysis with the goal of identifying potential quality improvement opportunities. The patient lists in Section 5 can be used to identify individual cases for audit and review. The Quality Management Report and Quarterly Reports can also be used to track trends in outcome and practice over time within your unit. These reports are intended for use as one component of a continuous quality improvement

program. The goal is to identify potential opportunities where we can do a better job for our patients and their families. We encourage you to use the Network reports in that spirit.

The Database is owned and maintained by the Vermont Oxford Network in Burlington, Vermont. Electronic data records are prepared and submitted by participating centers, reviewed for eligibility and missing items and are added to the Network Database using customized software that applies specific logic, range and consistency checks. Records requiring revision are reported to the participating center for correction. Quarterly data reports are prepared for all Expanded Database participants.

If you have any questions, please contact:

*Jeffrey D. Horbar, MD
Chief Executive and Scientific Officer*

Or

*A. Lynn Stillman
Administrative Director*

*Vermont Oxford Network
33 Kilburn Street
Burlington, Vermont 05401
(802) 865-4814
e-mail: lynn@vtoxford.org*

Database Project Staff

The following Vermont Oxford Network staff members contributed to the production of this report.

*Kathy Arcovitch
Account Manager*

*Ted Kreider
Programmer*

*Paula Beales
Account Manager*

*Pat Lavalette
Data Processor*

*Annie Blanchette
Account Manager*

*Jennifer Michelle
Reporting Specialist*

*Joe Carpenter
Statistician*

*Dan Morris
Programmer*

*Nancy Cloutier
Nightingale Coordinator
HIPAA Coordinator*

*David Mortensen
Programmer*

*Jimmie Sue Deppe
Software Support Specialist*

*Joan Schillhammer
Account Manager*

*Marilyn Eick
Account Manager*

*A. Lynn Stillman
Administrative Director*

*Karla Ferrelli
Clinical Trials Administrator*

*Andy Warner
DPT/IT Coordinator*

*Mary Freeman
Account Manager*

*Pete Warner
Media Services Coordinator
Programmer/Computer Support
Specialist*

*Bradley Holt
Programmer*

*Brian Wheel
Senior LAN Administrator*

*Brenton Keegan
Computer Support Specialist*

*Ellen Wilhite
Account Manager*

*Michael Kenny
Statistician*

CENTERS INCLUDED IN THE 2007 EXPANDED ANNUAL REPORT

Canada

Ontario

Windsor

Windsor Regional Hospital

Ireland

Cork

Dublin

Cork University Maternity Hospital

National Maternity Hospital

Malaysia

Kuala Lumpur

University Kebangsaan Malaysia

Portugal

Lisbon

Porto

Maternidade Dr. Alfredo Da Costa

Hospital de S. Joao

Saudi Arabia

Dhahran

Neonatology - Saudi Aramco

South Africa

Alberton

Bloemfontein

Bryanston

Cape Town

Cape Town

Durban

East London

Elarduspark

Johannesburg

Kempton Park

Kimberley

Krugersdorp

Mayfair West

N1 City

Panorama

Plumstead

Pretoria

Pretoria

Pretoria

Randburg

Richards Bay

Rivonia

Rustenburg

Stellenbosch

Vereeniging

Welkom

Clinton Hospital

Bloemfontein MediClinic

Sandton MediClinic

Christiaan Barnard Memorial Hospital

Kingsbury Hospital

St. Augustines Hospital

Life Health Care St. Dominic's

Kloof MediClinic

Park Lane Clinic

Arwyp Medical Centre

Kimberley MediClinic

Krugersdorp Hospital

Garden City Clinic

N1 City Netcare Hospital

Panorama MediClinic

Constantiaberg MediClinic

Femina Women's Hospital

Pretoria East Hospital

Unitas Hospital

Olivedale Clinic

The Bay Hospital

Sunninghill Hospital

Ferncrest Hospital

George Medi-Clinic

Vereeniging Medi-Clinic

Welkom Medi-Clinic

United States

Alabama

Montgomery

Baptist Medical Center

Arizona

Glendale

Mesa

Phoenix

Phoenix

Banner Thunderbird Medical Center

Banner Children's @ Banner Desert Medical Center

Phoenix Children's Hospital

St. Joseph's Hospital & Medical Center

Arkansas

Little Rock

Arkansas Children's Hospital

CENTERS INCLUDED IN THE 2007 EXPANDED ANNUAL REPORT

Colorado

Aurora
Denver
Fort Collins
Lafayette

Children's Hospital, The
Presbyterian-St. Luke's Medical Center
Poudre Valley Health System
Exempla Good Samaritan Medical Center

Connecticut

Farmington
New Haven

University of Connecticut Health Center
Yale-New Haven Children's Hospital

Florida

Margate
Miami
Miami
Orlando
St. Petersburg
Tampa

Northwest Medical Center
Baptist Children's Hospital
Miami Children's Hospital
Florida Children's Hospital
West Coast Neonatology, Inc. @ ACH
St. Joseph's Children's Hospital of Tampa

Georgia

Athens
Columbus
Conyers
Lawrenceville

Athens Regional Medical Center
The Medical Center at Columbus Regional
Rockdale Medical Center
Gwinnett Health System

Idaho

Pocatello

Portneuf Medical Center

Illinois

Aurora
Chicago
Hoffman Estates
Naperville
Oak Lawn
Peoria
Rockford
Springfield
Urbana

Rush-Copley Medical Center
John H. Stroger, Jr. Hospital of Cook County
St. Alexius Medical Center
Edward Hospital & Health Services
Christ Hospital & Medical Center
CHOI at OSF St. Francis Medical Center
Rockford Memorial Hospital
St. John's Hospital
Carle Foundation Hospital

Indiana

Fort Wayne
Fort Wayne
Indianapolis
Lafayette
Muncie
Newburgh

Dupont Hospital
Lutheran Hospital of Indiana
St. Vincent Women's Hospital
St. Elizabeth Regional Health
Ball Memorial Hospital
Women's Hospital

Iowa

Cedar Rapids
Davenport
Sioux City

St. Luke's Hospital
Genesis Medical Center
St. Luke's Regional Medical Center

Kansas

Kansas City
Shawnee Mission
Wichita
Wichita

University of Kansas Hospital Authority
Shawnee Mission Medical Center
Via Christi-St. Joseph Campus
Wesley Medical Center

Kentucky

Bowling Green
Louisville

The Medical Center NICU - Bowling Green
Kosair Children's Hospital

CENTERS INCLUDED IN THE 2007 EXPANDED ANNUAL REPORT

Kentucky

Louisville
Louisville

Norton Suburban Hospital
University of Louisville Hospital

Louisiana

Alexandria
Gretna
Lake Charles
Marrero
New Orleans
New Orleans
Shreveport
Shreveport

Christus St. Frances Cabrini Hospital
Meadowcrest Hospital - NICU
Women & Children's Hospital, Lake Charles
West Jefferson Medical Center
Medical Center of Louisiana - New Orleans
Ochsner Clinic Foundation
Christus Schumpert Sutton Children's
Willis-Knighton South

Maine

Bangor

Eastern Maine Medical Center

Maryland

Baltimore
Bethesda
Frederick

University of Maryland Division of Neonatology
National Naval Medical Center
Frederick Memorial Hospital

Massachusetts

Boston
Boston
Boston
South Weymouth
Worcester

Boston Medical Center
Brigham and Women's Hospital
Massachusetts General Hospital for Children
South Shore Hospital
UMass Memorial Healthcare

Michigan

Ann Arbor
Detroit
Grand Rapids
Marquette
Traverse City

University of Michigan-Holden NICU
Henry Ford Hospital
DeVos Children's/Spectrum Health
Marquette General Health System - NICU
Munson Medical Center

Minnesota

Minneapolis
Minneapolis
Robbinsdale
St. Cloud
St. Paul

Children's Hospitals & Clinics
University of Minnesota Children's Hospital, Fairview
North Memorial Medical Center
St. Cloud Hospital
Children's Hospitals and Clinics

Mississippi

Hattiesburg
Hattiesburg
Jackson
Jackson
Tupelo

Forrest General Hospital
Wesley Medical Center
River Oaks Health System
St. Dominic - Jackson Memorial Hospital
North Mississippi Medical Center

Missouri

Cape Girardeau
Columbia
Kansas City
St. Louis

Southeast Missouri Hospital
Columbia Regional Hospital
St. Luke's Hospital
St. Louis Children's Hospital

Montana

Billings
Billings
Great Falls

Billings Clinic
St. Vincent Hospital & Health Center
Benefis Healthcare

CENTERS INCLUDED IN THE 2007 EXPANDED ANNUAL REPORT

Nebraska

Omaha Children's Hospital Omaha

New Hampshire

Manchester Elliot Hospital

New Jersey

Jersey City Jersey City Medical Center

New York

Bronx Weiler Hospital-Montefiore
New York Bellevue Hospital
Staten Island Richmond University Medical Center
Syracuse St. Joseph's Health Center

North Carolina

Fayetteville Cape Fear Valley Medical Center
Greensboro Women's Hospital of Greensboro
Greenville P.C.M.H.
Hickory Catawba Valley Medical Center
Hickory Frye Regional Medical Center
Pinehurst First Health Moore Regional Hospital
Raleigh WAKEMED Faculty Physicians - Wake Medical Center
Wilmington New Hanover Regional Medical Center
Winston Salem Brenner Children's Hospital at WFUBMC

North Dakota

Bismarck Medcenter One Health Systems
Fargo Innovis Health
Fargo Meritcare Children's Hospital

Ohio

Akron Akron Children's Hospital
Canton Aultman Hospital
Cincinnati Children's Hospital Medical Center Cincinnati
Cincinnati University Hospital NICU
Cleveland Cleveland Clinic Foundation, The
Columbus Nationwide Children's Hospital
Lima St. Rita's Medical Center

Oklahoma

Oklahoma City O.U. Health Sciences Center
Tulsa OSU Medical Center
Tulsa St. John Medical Center

Oregon

Bend St. Charles Medical Center
Eugene Sacred Heart Medical Center
Medford Rogue Valley Medical Center
Portland Legacy Emanuel Children's Hospital
Portland Oregon Health & Sciences University
Portland Providence St. Vincent Medical Center
Salem Salem Hospital

Pennsylvania

Allentown Allentown's Neonatal Intensive Care
Bethlehem St. Luke's Hospital
DuBois DuBois Regional Medical Center NICU
Erie Hamot Medical Center
Erie St. Vincent Health Center

CENTERS INCLUDED IN THE 2007 EXPANDED ANNUAL REPORT

Pennsylvania

Philadelphia
Philadelphia
Pittsburgh

Hahnemann University Hospital
Thomas Jefferson University Hospital
Magee-Women's Hospital

Puerto Rico

San Juan

University of Puerto Rico Hospital NICU

South Carolina

Columbia
Greenville

Palmetto Health Richland
Children's Hospital of Greenville

South Dakota

Rapid City
Sioux Falls
Sioux Falls

Rapid City Regional Hospital
Avera McKennan
Boekelheide NICU at Sanford Health

Tennessee

Columbia
Johnson City
Memphis
Memphis
Nashville

Maury Regional Hospital
Johnson City Medical Center
Baptist Memorial Hospital for Women
Le Bonheur Children's Medical Center
Monroe Carell Jr. Children's Hospital Vanderbilt

Texas

Arlington
Corpus Christi
Dallas
Houston
Houston
Houston
Houston
Houston
Houston
Longview
Plano

Arlington Memorial Hospital
Corpus Christi Medical Center
Baylor University Medical Center
Children's Memorial Hermann Hospital
Memorial Hermann Memorial City Medical Center
Memorial Hermann Southwest
Texas Children's Hospital/Baylor College of Medicine
Woman's Hospital of Texas, The
Good Shepherd Medical Center
Medical Center of Plano

Virginia

Fairfax
Lynchburg

Inova Fair Oaks Hospital
Centra Health - Virginia Baptist Hospital

Washington

Renton
Richland
Seattle
Spokane
Spokane
Vancouver
Vancouver

Valley Med. Center/Pediatrix Medical Group of Washington
Kadlec Medical Center NICU
Swedish Medical Center
Deaconess Medical Center
Sacred Heart Medical Center
Legacy Salmon Creek Hospital
Southwest Washington Medical Center

West Virginia

Morgantown

West Virginia University School of Medicine

Wisconsin

Green Bay
LaCrosse
Madison
Marshfield
Neenah
Racine
Wausau

St. Vincent Hospital
Gundersen Lutheran Medical Center
St. Mary's Hospital Medical Center
St. Joseph Hospital-Marshfield Clinic
Children's Hospital of Wisconsin - Fox Valley
Wheaton Franciscan Healthcare - All Saints, Inc.
Aspirus Wausau Hospital

Section 1

Key Performance Measures All Eligible Infants at Expanded Data Centers

**For Period 2005 to 2007
and Birth Year 2007**

Section 1

Key Performance Measures

All Eligible Infants at Expanded Data Centers

For Period 2005 to 2007 and Birth Year 2007

Section 1 applies to all eligible infants who were born between 2005 and 2007 at Vermont Oxford Network centers participating in the Expanded Database. Information is included about the number of infants, as well as unadjusted and risk adjusted summaries for important morbidity, length of stay and mortality measures. Table 1.1 shows the number of infants reported by your center and by all Expanded Database centers from 2001 to 2007. Tables 1.2 to 1.4 and Figures 1.2 to 1.8 include data for the three-year period 2005 to 2007. Table 1.5 and Figures 1.9 to 1.16 show risk adjusted outcomes for infants born in 2007.

Table 1.1

Number of Infants in the Expanded Database

All Eligible Infants Born 2001 to 2007

Number of infants at your center and in all centers participating in the Expanded Database from 2001 to 2007. All eligible infants are counted for your center. Infants who transferred to another Network center within 28 days of birth are excluded from the Network totals to avoid double counting.

Table 1.2

Outcomes and Length of Stay

All Eligible Infants Born 2005 to 2007

Table 1.2 reports the observed or unadjusted values for outcomes and length of stay for all eligible infants at your center during the three-year period 2005 to 2007. The table also includes values for all Expanded Centers and the 25th and 75th percentile values of Network hospital proportions for the three-year period. By definition, at least 25% of the centers will have values at or below the 25th percentile and at least 25% of the centers will have values at or above the 75th percentile. Please note that this table does not include risk adjusted measures. Standardized ratios and confidence intervals for mortality and key morbidities are reported in Figure 1.1. Risk-adjusted measures for Total Hospital Stay are reported in Section 7 for infants born in 2007.

The outcome measures shown in Table 1.2 include the following:

- Pneumothorax. This measure is applicable to all infants who did not die in the delivery room/initial resuscitation area.
- Chronic Lung Disease at 36 weeks corrected gestational age for infants whose gestational age is less than 33 weeks (CLD 36 Weeks < 33). The algorithm for determining CLD, described below, makes certain assumptions about infants who are not in the reporting hospital on the date of week 36 corrected gestational age. These assumptions have been tested using actual data and found to provide more accurate estimates of the rates of oxygen at 36 weeks, as compared to estimates based on infants actually hospitalized at 36 weeks. This measure is applicable to

all infants who meet the conditions of the algorithm, described below, and whose gestational age in completed weeks is 32 weeks or less. For the algorithm, corrected gestational age (CGA) is calculated by adding the number of weeks hospitalized to the infant's gestational age, as described in the Vermont Oxford Network Manual of Operations.

CLD Algorithm (infants < 33 weeks gestation)

- If the infant is hospitalized at 36 weeks, CLD is based on whether the infant was on oxygen at 36 weeks, as answered on the Discharge Form.
 - If the infant is discharged between 34 and 36 weeks CGA, CLD is coded Yes if the infant was on oxygen at the time of discharge and is coded No if the infant was not on oxygen at the time of discharge.
 - If the infant is discharged home or transferred before 34 weeks CGA and the infant was not on oxygen at the time of discharge, CLD is coded NO.
 - If the infant's gestational age is unknown, or if the infant is discharged home or transferred before 34 weeks CGA and the infant was on oxygen at the time of discharge, CLD is coded as unknown and the case is not considered in calculating CLD rates.
 - If the infant dies in the delivery room or prior to 36 weeks CGA, or if the infant's gestational age is greater than 32 weeks, CLD is coded as not applicable and the case is not considered in calculating CLD rates.
-
- Necrotizing Enterocolitis (NEC). This measure is applicable to all infants who did not die in the delivery room/initial resuscitation area.
 - Late Bacterial Infection after day 3 of life. This measure is applicable to infants hospitalized after day 3 of life who are either in your center, in the transferring center if outborn, or in the transferred-to center if readmitted to your hospital following transfer.
 - Coagulase Negative Staph Infection after day 3 of life. This measure is applicable to infants hospitalized after day 3 of life who are either in your center, in the transferring center if outborn, or in the transferred-to center if readmitted to your hospital following transfer.
 - Nosocomial Bacterial Infection, defined as either Late Bacterial and/or Coagulase Negative Staph Infection after day 3 of life. This measure is applicable to infants hospitalized after day 3 of life who are either in your center, in the transferring center if outborn, or in the transferred-to center if readmitted to your hospital following transfer.
 - Fungal Infection after day 3 of life. This measure is applicable to infants hospitalized after day 3 of life who are either in your center, in the transferring center if outborn, or in the transferred-to center if readmitted to your hospital following transfer.
 - Death at any time prior to discharge home or first birthday (Mortality). This measure is applicable to all infants for whom survival status is known. Mortality is not reported for some hospitals with missing disposition data.
 - Average Length of Stay at discharge from your center (Initial Disposition: Home, Transfer, Died) for infants who were discharged home from your center or who

- were transferred from your center and subsequently discharged home (Center LOS). Infants still hospitalized as of first birthday are counted as discharged home.
- Average Total Hospital Stay at Final Disposition (Home, Died) for infants who were discharged home from your center or who were transferred from your center and subsequently discharged home (Total LOS). Infants still hospitalized as of first birthday are counted as discharged home, Total Hospital Stay includes days in other hospitals for infants who were transferred and days prior to admission to your center when infants are outborn. Some hospitals with missing data may not receive information on Total Hospital Stay.

For each of the three years, Table 1.2 includes columns showing the number of infants at your center for whom the measures are applicable (N) and the observed proportion of infants with the outcome at your center (Ctr Value). For the overall three-year period, the columns show the total number of infants at your center (N), the proportion of infants with the outcome (Ctr Value), the proportion of infants with the outcome at all centers participating in the Expanded Database (Network Value), and the Network first and third quartile values for all participating hospitals (25th percentile, 75th percentile). At least twenty-five percent of the reporting hospitals had an observed proportion for the outcome equal to or less than the value in the column labeled 25th %tile, and at least 25% of hospitals had an observed proportion equal to or greater than the value in the column labeled 75th %tile. If your center's value for the three-year period is between the 25th and 75th percentile values, this means that your center's observed value for the measure falls in the middle 50% of Network hospitals.

Table 1.3

Hypoxic-Ischemic Encephalopathy

All Eligible Infants with 36 Weeks Gestation or More Born 2005 to 2007

For all eligible infants at your center and at all centers participating in the Expanded Database Table 1.3 shows the number of infants who were born between 2005 and 2007 with gestational age 36 weeks or more (Total Infants), the number and percentage of cases of Hypoxic-Ischemic Encephalopathy (HIE) and, for infants diagnosed with HIE, the severity of cases (Mild, Moderate, Severe, Unknown). Please note that the HIE measures apply only to infants whose gestational age is 36 weeks or more.

Table 1.4

Risk-Adjusted Outcome Measures

All Eligible Infants Born 2005 to 2007

Table 1.4 reports the risk-adjusted outcome measures for all eligible infants who were born during the three year period 2005 to 2007. The number of infants at your center for whom the measures are applicable (N) is shown in the first column of Table 1.4. The statistics in Table 1.4 correspond to data plotted in Figures 1.1 to 1.8. The measures in the table are described in Table 1.2 above.

Each of the SMRs and confidence intervals has been corrected or "shrunk" using methods which recognize that some of the observed variation is random "noise", particularly for small hospitals. Shrinkage refers to the process used to adjust the SMR value for the measure by moving it closer to the mean value of all Expanded Data Center SMRs when the estimate is imprecise, i.e., when the number of cases is small. Shrunk

estimates are a weighted average between the calculated SMR and the mean of all hospital SMRs. For hospitals with a small number of infants, the Network mean value will be weighted more heavily; for large hospitals, the calculated SMR will be weighted more heavily. Shrunken estimates are more stable over time than if the correction were not applied, because they adjust for imprecision by filtering random variation.

Both the estimate of the shrunken SMR and the lower and upper bounds of the 95% confidence interval are based on a multivariable adjustment model which considers the case mix at your center. All models include the following predictors:

- Gestational age in completed weeks and its squared term.
- Small for gestational age (SGA, Yes or No), defined as being in the 10th percentile or less for birth weight, given the infant's gestational age, the maternal race, the infant gender and whether the infant was a singleton or multiple birth. The United States 2001 and 2002 Natality Datasets were used for SGA determinations.
- Major birth defect (Yes or No). For reported outcomes other than mortality, this dichotomous predictor is used. For the mortality outcome, indicator measures for the severity of the defect are included in the model (No Defect, Moderately Severe, Severe, Very Severe, Most Severe). The severity categories for birth defects are derived empirically from an analysis of mortality risk for birth defects reported to the database. The text descriptions for all birth defects coded as "other" are reviewed to identify cases in which coding instructions were not followed or where specific lethal anomalies were not assigned to the most severe category.
- Multiple birth (Yes or No).
- APGAR score at 1 minute (0 to 10).
- Infant gender (Male or Female).
- Maternal race (Black, Hispanic, White, Asian or Other).
- Vaginal delivery (Yes or No).
- Birth location (Inborn or Outborn).

The model for chronic lung disease for infants with gestational age less than 33 weeks also includes an indicator variable to adjust for altitude of the center (4000 feet or less, over 4000 feet).

When one or more predictor variables are missing for infants with a known outcome measure, an imputation procedure was used based on Network or center specific rates for the missing values.

The shrunken SMR and its confidence interval indicate whether your center has more or fewer infants with the outcome than would be expected based on the characteristics of infants treated at your center. If the upper bound of the shrunken SMR is less than 1, this indicates that your center has fewer infants with the outcome than expected. If the lower bound of the shrunken SMR is greater than 1, this indicates that your center has more infants with the outcome than expected. If the lower and upper bounds include 1, this means that the number of infants with the outcome was not significantly

different from the number of infants expected, after adjusting for the characteristics of infants treated.

Table 1.4 also shows the difference between the number of observed (O) and expected (E) cases (O-E) for each of the outcome measures. The shrunken O-E estimates are based on the same multivariable risk adjustment models as were used for calculating the SMRs. A negative value for O-E indicates that your center performance for the outcome was better than expected, and the value of O-E is the estimated number of cases saved, adjusting for case mix. A positive value for O-E indicates that your center performance was not as good as expected, and the value of O-E is the estimated number of additional cases your center treated, adjusting for case mix. If the value of O-E is 0, this means that your center performance for the measures was as expected. The O-E values have been corrected using shrinkage methods to provide an estimate of the true difference between the observed and expected values, as discussed above.

The control limits plotted in Figures 1.2 to 1.8 and categorized in Table 1.4 are useful for determining whether your center value for O-E is a true signal. If the value of O-E is greater than the 95% control limit upper bound, this means that there is statistical evidence that the number of observed cases is greater than the number expected, after controlling for case mix. This will be indicated by the word “Above” in the column label O-E Relative to Control Limit in Table 1.4. If the value of O-E is less than the 95% control limit lower bound, there is statistical evidence that the number of observed cases is less than the number expected. This will be indicated by “Below” in Table 1.4. If the value of O-E is between the lower and upper 95% control limits, this means that there is not significant statistical evidence of a difference between the number of observed and expected cases and will be indicated by the word “Within” in Table 1.4.

Figure 1.1

Shrunken Standardized Morbidity and Mortality Ratios (SMR)

All Eligible Infants Born 2005 to 2007

Figure 1.1 plots the values for the shrunken SMRs and their 95% confidence intervals for the three year period 2005 to 2007, which were shown in Table 1.4 and described in the introduction for Table 1.4 above. Some of the outcome measure names in Table 1.4 have been further abbreviated in the figure. These include pneumothorax (PNTX), late bacterial infection (LBPAT), coagulase negative staph (CNEG) and nosocomial bacterial infection (NOSO).

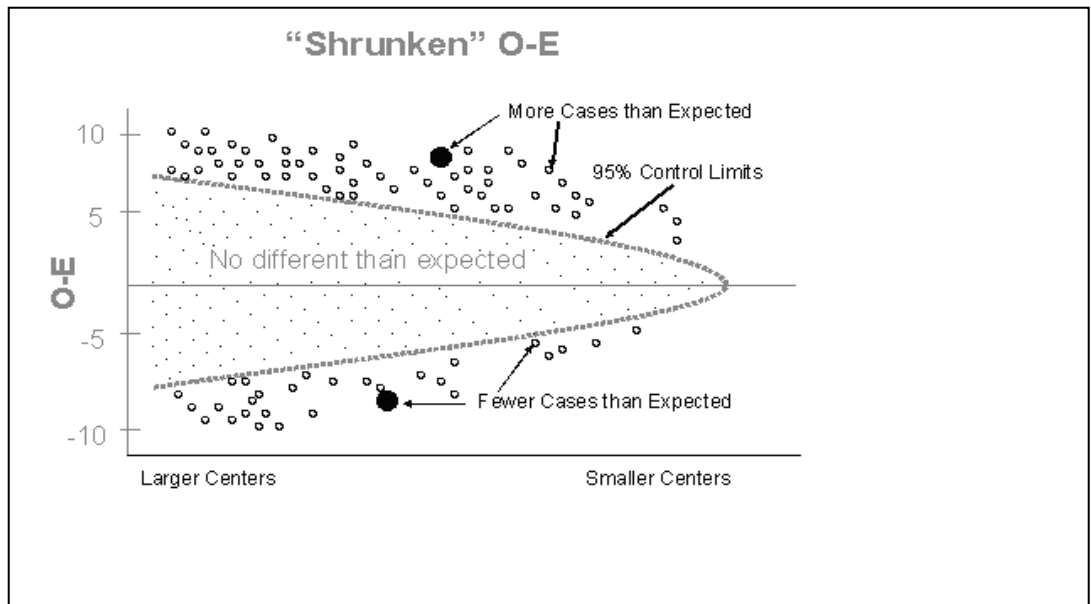
Figures 1.2 to 1.8

Observed Minus Expected Values

All Eligible Infants, Shrunken Estimates for 2005 to 2007

Figures 1.2 to 1.8 are plots of the values for the shrunken O-E estimates and the 95% control limits for all centers reporting in 2007. These estimates are based on data submitted for all eligible infants who were born between 2005 and 2007 at centers participating in the Expanded Database. Your center is represented by a large dot. Other centers are represented by an asterisk (*) if their O-E values are between the lower and upper control limits and are represented by a small circle if their O-E values are above the upper or below the lower control limits. To avoid expanding the Y axis for extreme values, the plotted range is -80 to 80 cases. If your center value is outside

this range, a footnote will be included in the figure. If you do not see a large dot in a figure for your center, see Table 1.4 for your center value.



In some of the figures the number of centers outside the control limits is larger than five percent of all reporting centers. The 95% control limits in Figures 1.2 to 1.8 represent the values at which the difference between the number of observed cases and the number of expected cases may be interpreted as a statistically valid signal, as opposed to bounds which include 95% of the cases. The control limits are calculated based on the assumptions associated with correcting (shrinking) the standardized ratios. For additional information about the O-E values and the control limits, please see the description above for Table 1.4.

Figure 1.2
Observed Minus Expected Values for
Pneumothorax
All Eligible Infants, Shrunken Estimates for 2005 to 2007

Figure 1.3
Observed Minus Expected Values for
Chronic Lung Disease in Infants < 33 Weeks GA
All Eligible Infants, Shrunken Estimates for 2005 to 2007

Figure 1.4
Observed Minus Expected Values for
Necrotizing Enterocolitis
All Eligible Infants, Shrunken Estimates for 2005 to 2007

Figure 1.5
Observed Minus Expected Values for
Late Bacterial Infection
All Eligible Infants, Shrunken Estimates for 2005 to 2007

Figure 1.6
Observed Minus Expected Values for
Coagulase Negative Staph Infection
All Eligible Infants, Shrunken Estimates for 2005 to 2007

Figure 1.7
Observed Minus Expected Values for
Nosocomial Infection
All Eligible Infants, Shrunken Estimates for 2005 to 2007

Figure 1.8
Observed Minus Expected Values for
Mortality
All Eligible Infants, Shrunken Estimates for 2005 to 2007

Table 1.5
Risk-Adjusted Outcome Measures
All Eligible Infants Born in 2007

Table 1.5 reports the risk-adjusted outcome measures for all eligible infants who were born at centers participating in the Expanded Database in 2007. Table 1.5 is similar to Table 1.4, except Table 1.5 is restricted to infants born in 2007. For a description of the table layout and statistics, please see the text for Table 1.4 above. Each of the measures in Table 1.5 is plotted in Figures 1.9 to 1.16.

Figure 1.9
Shrunken Standardized Morbidity and Mortality Ratios (SMR)
All Eligible Infants Born in 2007

Figure 1.9 shows the values for the shrunken SMRs and their 95% confidence intervals for all eligible infants who were born at centers participating in the Expanded Database in 2007. The values for your center are reported in Table 1.5. For a description of the outcomes in this figure, please see the text for Tables 1.2, 1.4 and 1.5 above. Some of the outcome measure names in Table 1.5 have been further abbreviated in the figure. These include pneumothorax (PNTX), late bacterial infection (LBPATH), coagulase negative staph infection (CNEG) and nosocomial bacterial infection (NOSO).

Figures 1.10 to 1.16
Observed Minus Expected Values
All Eligible Infants, Shrunken Estimates for Birth Year 2007

Figures 1.10 to 1.16 are plots of the values for the shrunken O-E estimates and the 95% control limits for all eligible infants who were born at centers participating in the Expanded Database in 2007. Your center is represented by a large dot. Other centers with O-E values between the lower and upper control limits are represented by an asterisk (*). Other centers with O-E values either below the lower control limit or above

the upper control limit are identified with a small circle. Please note that the plotted range is -80 to 80 cases. If your center value is outside this range, the value will not be plotted and a footnote will indicate this fact; when this is the case, see Table 1.5 for your center value.

Figure 1.10
Observed Minus Expected Values for
Pneumothorax
All Eligible Infants, Shrunken Estimates for Birth Year 2007

Figure 1.11
Observed Minus Expected Values for
Chronic Lung Disease in Infants < 33 Weeks GA
All Eligible Infants, Shrunken Estimates for Birth Year 2007

Figure 1.12
Observed Minus Expected Values for
Necrotizing Enterocolitis
All Eligible Infants, Shrunken Estimates for Birth Year 2007

Figure 1.13
Observed Minus Expected Values for
Late Bacterial Infection
All Eligible Infants, Shrunken Estimates for Birth Year 2007

Figure 1.14
Observed Minus Expected Values for
Coagulase Negative Staph Infection
All Eligible Infants, Shrunken Estimates for Birth Year 2007

Figure 1.15
Observed Minus Expected Values for
Nosocomial Infection
All Eligible Infants, Shrunken Estimates for Birth Year 2007

Figure 1.16
Observed Minus Expected Values for
Mortality
All Eligible Infants, Shrunken Estimates for Birth Year 2007

Section 2

Characteristics, Interventions, and Outcomes by Birth Weight

**All Eligible Infants at
Expanded Data Centers
2007**

Section 2

Characteristics, Interventions, and Outcomes by Birth Weight

All Eligible Infants Born in 2007

The tables and figures in this section report characteristics, interventions and outcomes by birth weight category for Expanded Database infants who were born in 2007.

Table 2.1 shows the number of infants at your center for whom the various measures in Section 2 are applicable, by five birth weight categories and overall (All, ≤ 1000 , 1001-1500, 1501-2000, 2001-2500, > 2500). Tables 2.2 to 2.10 report the observed value at your center for the indicated characteristics, interventions and outcomes and the first and third quartile values (25th and 75th percentiles) for all Expanded Data Centers (Network). By definition, at least 25% of the centers will have values below the 25th percentile and at least 25% of the centers will have values at or above the 75th percentile.

Table 2.1

Number of Infants for Categories of Measures by Birth Weight All Eligible Infants Born in 2007

Number of infants at your center, by birth weight category and overall, for the various categories of denominators that are applicable to measures in this section. The numbers for CLD for infants with gestational age of 32 weeks or less (Infants < 33 Weeks GA) are the number eligible based on the algorithm described in the introduction to Table 1.2 in Section 1.

Table 2.2

Infant Characteristics by Birth Weight All Eligible Infants Born in 2007

Characteristics of infants by birth weight category and overall for all eligible infants who were born in 2007. The percent of infants at your center and the first and third quartile values for all centers participating in the Expanded Database are shown for each of the characteristics. Note that for outborn infants, those admitted early (on or before day 3 of life) are differentiated from those admitted after day 3. The Antenatal Steroids measure GA 24/0 to 33/6 is restricted to infants with gestational ages between 24 and 33 completed weeks gestation. The percent of infants with admission temperature less than 36.5 degrees Celsius is restricted to infants whose temperature was measured within one hour of admission to your NICU. Other measures in this table apply to all eligible infants (Total Infants, Table 2.1).

Table 2.3

Initial Resuscitation by Birth Weight All Eligible Infants Born in 2007

Initial resuscitation by birth weight category and overall for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the

measures. The measures in this table are applicable to all eligible infants (Total Infants, Table 2.1).

Table 2.4

Respiratory Outcomes and Interventions by Birth Weight

All Eligible Infants Born in 2007

Respiratory outcomes and interventions by birth weight category and overall for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures. Table 2.1 shows the number of infants at your center for whom these measures are applicable.

The Early CPAP measure is restricted to infants who receive CPAP and indicates whether the infant receives continuous positive airway pressure prior to receiving endotracheal tube ventilation. The Vent after Early CPAP measure is restricted to infants who receive Early CPAP and indicates whether the infant received CPAP prior to receiving any ETT ventilation and later received ETT ventilation. The Surfactant after 2 Hours measure is restricted to infants who receive surfactant.

The Oxygen at 28 Days and Oxygen at 36 Weeks measures apply only to infants who, on the date of Day 28 or date of Week 36, are in your center, in the transferring center if outborn or in the “transferred to” center if the infant is readmitted. The measure for CLD at 36 Weeks for infants with gestational age less than 33 weeks (CLD 36 < 33) is based on the algorithm for chronic lung disease described in the introduction to Table 1.2 in Section 1. The CLD measure only applies to infants who can be classified based on the algorithm parameters.

The Discharge on Oxygen and Discharge on Monitor measures apply to infants discharged home or transferred.

Table 2.5

Median Days Ventilated by Birth Weight and Initial Disposition Status

All Eligible Infants Born in 2007

Median days ventilated from admission to your center until initial disposition for all eligible infants who were born in 2007. The median values for infants at your center and quartile values for all centers participating in the Expanded Database are shown by birth weight category and initial disposition status (Home, Transfer, Died, All). If the values are ordered from lowest to highest, the median is the middle value. The number of days ventilated only includes days from admission to initial disposition at your center. It does not include days ventilated at the transferring center (for outborn infants), at the “transferred to” center for infants who transfer, or days following transfer for infants who are readmitted after transfer. Infants still hospitalized as of first birthday are included in the “Home” category.

Table 2.6**Other Outcomes and Interventions by Birth Weight****All Eligible Infants Born in 2007**

Other outcomes and interventions by birth weight category and overall for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures. Unless otherwise indicated, the measures reported in this table apply to all infants except those who died in the delivery room/initial resuscitation area.

For infants who receive a Cranial Ultrasound, the Any IVH measure is the percent of infants with grades 1 to 4 Periventricular-Intraventricular Hemorrhage (PIH); the Severe IVH measure is the percent with grades 3 or 4 PIH. The Any ROP measure is the percent of infants with stage 1 to 4 Retinopathy of Prematurity among infants who had a retinal exam performed; the Severe ROP measure is the percent with stage 3 or 4 ROP.

Table 2.7**Surgery by Birth Weight****All Eligible Infants Born in 2007**

Surgical procedures by birth weight category and overall all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures: PDA Ligation, NEC Surgery, ROP Surgery, Cardiac Surgery, Other Major Surgery, Major Surgery by Category, and Any Major Surgery. Procedures not included in major surgery are also listed. Surgery measures apply to all eligible infants, except those who died in the delivery room/initial resuscitation area.

Table 2.8**Enteral Feeding by Birth Weight and Discharge Status****All Eligible Infants Born in 2007**

Enteral Feeding at discharge from your center (Home, Transfer, Died, All) by birth weight category for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the Enteral Feeding categories: Any Human Milk, Formula Only, No Enteral Feeding or Unknown Enteral Feeding. The two sub-categories of Any Human Milk, Human Milk Only and Milk with Formula/Fortifier, are the percent of all infants whose only enteral feeding is breast milk and the percent feeding with both formula/fortifier and breast milk, respectively. Note that for infants transferred from and readmitted to your center, Enteral Feeding at discharge is based on the status at discharge following readmission. The Enteral Feeding measures apply to all infants who did not die in the delivery room/initial resuscitation area and for whom discharge status is known. Infants still in the hospital at one year are included in the Home category of discharge status.

Table 2.9**Average Weight in Grams by Birth Weight and Initial Disposition Status****All Eligible Infants Born in 2007**

Average Weight in grams at initial disposition (Home, Transfer, Died, All) by birth weight category for all eligible infants who were born in 2007. The Average

Weight at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures. Infants still hospitalized as of first birthday are included in the “Home” category. These measures apply to all infants for whom discharge status is known, except infants who died in the delivery room/initial resuscitation area.

Table 2.10
Median Time to First Dose of Surfactant by Birth Weight
All Eligible Infants Born in 2007

Median Time to First Dose of Surfactant by birth weight category for all eligible infants who were born in 2007. The median Time to First Dose at your center and Network quartile values are shown. If the values are ordered from lowest to highest, the median is the middle value. These measures apply to all eligible infants who receive surfactant.

Figures 2.1 to 2.28 show summary data for all eligible infants who were born in 2007 by birth weight category; **Figure 2.29** applies to all surviving eligible infants born in 2007. The number or percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures. Your center is represented by a large dot in the figures, indicating the number of infants or the percentage of the characteristic, intervention or outcome for the birth weight range. The vertical bars in the figures represent the first and third hospital quartile values (25th and the 75th percentile values) for all Expanded Data Centers. By definition, at least 25% of the centers will have values at or below the 25th percentile and at least 25% of the centers will have values at or above the 75th percentile. If the dot is within the vertical bar, then your center value is between the 25th and 75th percentile values.

Figure 2.1
Number of Admissions by Birth Weight
All Eligible Infants Born in 2007

These admissions refer to all eligible infants who were born in 2007.

Figure 2.2
C-Section by Birth Weight
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007.

Figure 2.3
Inborn Births by Birth Weight
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007.

Figure 2.4
Conventional Ventilation by Birth Weight
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.5
High Frequency Ventilation by Birth Weight
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.6
High Flow Nasal Cannula by Birth Weight
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.7
Nasal IMV or SIMV by Birth Weight
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.8
Pneumothorax by Birth Weight
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.9
Surfactant at Any Time by Birth Weight
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007.

Figure 2.10
First Dose of Surfactant after 2 Hours by Birth Weight
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007 and receive surfactant.

Figure 2.11
ECMO by Birth Weight
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.12
Nitric Oxide by Birth Weight
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.13**Chronic Lung Disease in Infants < 33 Weeks GA by Birth Weight****All Eligible Infants Born in 2007**

Chronic lung disease (CLD) at 36 weeks corrected gestational age for eligible infants who were born in 2007, restricted to infants whose gestational age is less than 33 weeks. The number of infants for whom this measure applies is based on the gestational age restriction and the algorithm described in the introduction to Section 1, Table 1.2.

Figure 2.14**Patent Ductus Arteriosus by Birth Weight****All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.15**Indomethacin by Birth Weight****All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.16**Early Bacterial Infection by Birth Weight****All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.17**Late Bacterial Infection by Birth Weight****All Eligible Infants Born in 2007**

Late Bacterial Infection after day 3 of life. This measure is applicable to all eligible infants who were born in 2007 and hospitalized after day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 2.18**Coagulase Negative Staph Infection by Birth Weight****All Eligible Infants Born in 2007**

Coagulase Negative Staph Infection after day 3 of life. This measure is applicable to all eligible infants who were born in 2007 and hospitalized after day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 2.19**Nosocomial Bacterial Infection by Birth Weight****All Eligible Infants Born in 2007**

Late Bacterial and/or Coagulase Negative Staph Infection after day 3 of life. This measure is applicable to all eligible infants who were born in 2007 and hospitalized after

day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 2.20

Fungal Infection by Birth Weight

All Eligible Infants Born in 2007

Fungal Infection after day 3 of life. This measure is applicable to all eligible infants who were born in 2007 and hospitalized after day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 2.21

Cranial Ultrasound Exam by Birth Weight

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.22

Intraventricular Hemorrhage by Birth Weight

All Eligible Infants Born in 2007

Grades 1 to 4 Periventricular-Intraventricular Hemorrhage. This measure applies to all eligible infants who were born in 2007 and had a cranial ultrasound on or before day 28 of life.

Figure 2.23

Severe Intraventricular Hemorrhage by Birth Weight

All Eligible Infants Born in 2007

Grades 3 or 4 Periventricular-Intraventricular Hemorrhage. This measure applies to all eligible infants who were born in 2007 and had a cranial ultrasound on or before day 28 of life.

Figure 2.24

Periventricular Leukomalacia by Birth Weight

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007 and had a cranial ultrasound exam prior to discharge.

Figure 2.25

Eye Exams by Birth Weight

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.26

Retinopathy of Prematurity by Birth Weight

All Eligible Infants Born in 2007

Stages 1 to 4 ROP. This measure applies to all eligible infants who were born in 2007 and had a retinal exam.

Figure 2.27

Severe Retinopathy of Prematurity by Birth Weight

All Eligible Infants Born in 2007

Stages 3 or 4 ROP. This measure applies to all eligible infants who were born in 2007 and had a retinal exam.

Figure 2.28

Any Major Surgery by Birth Weight

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.29

Any Breast Milk at Discharge by Birth Weight

All Surviving Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007 and whose discharge status was home or hospitalized as of first birthday. Note that for infants transferred from and readmitted to your center, Any Breast Milk at discharge is based on the status at discharge following readmission.

Section 3

Characteristics, Interventions, and Outcomes by Gestational Age

**All Eligible Infants at
Expanded Data Centers
2007**

Section 3

Characteristics, Interventions, and Outcomes by Gestational Age All Eligible Infants 2007

The tables and figures in this section report characteristics, interventions and outcomes by gestational age category for Expanded Database infants who were born in 2007. Table 3.1 shows the number of infants for whom the various measures in Section 3 are applicable, by gestational age category (< 27, 27-29, 30-32, 33-36, 37-41, > 41). Tables 3.2 to 3.10 report the observed value at your center for the indicated characteristics, interventions and outcomes and the first and third quartile values (25th and 75th percentiles) for all Expanded Data Centers. By definition, at least 25% of the centers will have values at or below the 25th percentile and at least 25% of the centers will have values at or above the 75th percentile.

Table 3.1

Number of Infants for Categories of Measures by Gestational Age All Eligible Infants Born in 2007

Number of infants at your center, by gestational age category, for the various categories of denominators that are applicable to measures in this section. The numbers for CLD for infants with gestational age of 32 weeks or less (Infants < 33 Weeks GA) are the number eligible based on the algorithm described in the introduction to Table 1.2 in Section 1.

Table 3.2

Infant Characteristics by Gestational Age All Eligible Infants Born in 2007

Characteristics of infants by gestational age category for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the characteristics. Note that for outborn infants, those admitted early (on or before day 3 of life) are differentiated from those admitted after day 3. The Antenatal Steroids measure GA 24/0 to 33/6 is restricted to infants with gestational ages between 24 and 33 completed weeks gestation. The percent of infants with admission temperature less than 36.5 degrees Celsius is restricted to infants whose temperature was measured within one hour of admission to your NICU. Other measures in this table apply to all eligible infants (Total Infants, Table 3.1).

Table 3.3

Initial Resuscitation by Gestational Age All Eligible Infants Born in 2007

Initial resuscitation by gestational age category for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures. The measures in this table are applicable to all eligible infants (Total Infants, Table 3.1).

Table 3.4
Respiratory Outcomes and Interventions by Gestational Age
All Eligible Infants Born in 2007

Respiratory outcomes and interventions by gestational age category for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures. Table 3.1 shows the number of infants at your center for whom these measures are applicable.

The Early CPAP measure is restricted to infants who receive CPAP and indicates whether the infant received continuous positive airway pressure prior to receiving endotracheal tube ventilation. The Vent after Early CPAP measure is restricted to infants who receive Early CPAP and indicates whether the infant received CPAP prior to receiving any ETT ventilation and later receive ETT ventilation. The Surfactant after 2 Hours measure is restricted to infants who receive surfactant.

The Oxygen at 28 Days and Oxygen at 36 Weeks measures only apply to infants who, on the date of Day 28 or the date of Week 36 are in your center, in the transferring center if outborn or in the “transferred to” center if the infant is readmitted. The measure for CLD at 36 Weeks for infants with gestational age less than 33 weeks ($CLD_{36} < 33$) is based on the algorithm for chronic lung disease described in the introduction to Table 1.2 in Section 1. The CLD measure only applies to infants who can be classified based on the algorithm parameters.

The Discharge on Oxygen and Discharge on Monitor measures apply to infants discharged home or transferred.

Table 3.5
Median Days Ventilated by Gestational Age and Initial Disposition Status
All Eligible Infants Born in 2007

Median days ventilated from admission to your center until initial disposition for all eligible infants who were born in 2007. The median values for infants at your center and quartile values for all centers participating in the Expanded Database are shown by gestational age category and initial disposition status (Home, Transfer, Died, All). If the values are ordered from lowest to highest, the median is the middle value. The number of days ventilated only includes days from admission to initial disposition at your center. It does not include days ventilated at the transferring center (for outborn infants), at the “transferred to” center for infants who transfer, or days following transfer for infants who are readmitted after transfer. Infants still hospitalized as of first birthday are included in the “Home” category.

Table 3.6**Other Outcomes and Interventions by Gestational Age****All Eligible Infants Born in 2007**

Other outcomes and interventions by gestational age category for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures. Unless otherwise indicated by asterisks and footnotes, the measures reported in this table apply to all infants except those who died in the delivery room/initial resuscitation area.

For infants who receive a Cranial Ultrasound, the Any IVH measure is the percent of infants with grades 1 to 4 Periventricular-Intraventricular Hemorrhage (PIH); the Severe IVH measure is the percent with grades 3 or 4 PIH. The Any ROP measure is the percent of infants with stage 1 to 4 Retinopathy of Prematurity among infants who had a retinal exam performed; the Severe ROP measure is the percent with stage 3 or 4 ROP.

Table 3.7**Surgery by Gestational Age****All Eligible Infants Born in 2007**

Surgical procedures by gestational age category for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures: PDA Ligation, NEC Surgery, ROP Surgery, Cardiac Surgery, Other Major Surgery, Major Surgery by Category, and Any Major Surgery. Procedures not included in major surgery are also listed. Surgery measures apply to all eligible infants, except those who died in the delivery room/initial resuscitation area.

Table 3.8**Enteral Feeding by Gestational Age and Discharge Status****All Eligible Infants Born in 2007**

Enteral Feeding at discharge from your center (Home, Transfer, Died, All) by gestational age category for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the Enteral Feeding categories: Any Human Milk, Formula Only, No Enteral Feeding or Unknown Enteral Feeding. The two sub-categories of Any Human Milk, Human Milk Only and Milk with Formula/Fortifier, are the percent of all infants whose only enteral feeding is breast milk and the percent feeding with both formula/fortifier and breast milk, respectively. Note that for infants transferred from and readmitted to your center, Enteral Feeding at discharge is based on the status at discharge following readmission. The Enteral Feeding measures apply to all infants who did not die in the delivery room/initial resuscitation area and for whom discharge status is known. Infants still in the hospital at one year are included in the Home category of discharge status.

Table 3.9**Average Weight in Grams by Gestational Age and Initial Disposition Status
All Eligible Infants Born in 2007**

Average Weight in grams at initial disposition (Home, Transfer, Died, All) by gestational age category for all eligible infants who were born in 2007. The Average Weight at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures. Infants still hospitalized as of first birthday are included in the “Home” category. These measures apply to all infants for whom discharge status is known, except infants who died in the delivery room/initial resuscitation area.

Table 3.10**Median Time to First Dose of Surfactant by Gestational Age
All Eligible Infants Born in 2007**

Median Time to First Dose of Surfactant by gestational age category for all eligible infants who were born in 2007. The Median Time to First Dose at your center and Network quartile values are shown. If the values are ordered from lowest to highest, the median is the middle value. These measures apply to all eligible infants who receive surfactant.

Figures 3.1 to 3.28 show summary data for all eligible infants who were born in 2007 by gestational age category; **Figure 3.29** applies to all surviving eligible infants born in 2007. The number or percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures. Your center is represented by a large dot in the figures, indicating the number of infants or the percentage of the characteristic, intervention or outcome for the birth weight range. The vertical bars in the figures represent the first and third hospital quartile values (25th and the 75th percentile values) for all Expanded Data Centers. By definition, at least 25% of the centers will have values at or below the 25th percentile and 25% of the centers will have values at or above the 75th percentile. If the dot is within the vertical bar, then your center value is between the 25th and 75th percentile values.

Figure 3.1**Number of Admissions by Gestational Age
All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007.

Figure 3.2**C-Section by Gestational Age
All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007.

Figure 3.3**Inborn Births by Gestational Age
All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007.

Figure 3.4

Conventional Ventilation by Gestational Age

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.5

High Frequency Ventilation by Gestational Age

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.6

High Flow Nasal Cannula by Gestational Age

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.7

Nasal IMV or SIMV by Gestational Age

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.8

Pneumothorax by Gestational Age

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.9

Surfactant at Any Time by Gestational Age

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007.

Figure 3.10

First Dose of Surfactant after 2 Hours by Gestational Age

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007 and receive surfactant.

Figure 3.11

ECMO by Gestational Age

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.12

**Nitric Oxide by Gestational Age
All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.13

**Chronic Lung Disease in Infants < 33 Weeks GA by Gestational Age
All Eligible Infants Born in 2007**

Chronic lung disease (CLD) at 36 weeks corrected gestational age for eligible infants who were born in 2007, restricted to infants whose gestational age is less than 33 weeks. The number of infants for whom this measure applies is based on the gestational age restriction and the algorithm described in the introduction to Section 1, Table 1.2.

Figure 3.14

**Patent Ductus Arteriosus by Gestational Age
All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.15

**Indomethacin by Gestational Age
All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.16

**Early Bacterial Infection by Gestational Age
All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.17

**Late Bacterial Infection by Gestational Age
All Eligible Infants Born in 2007**

Late Bacterial Infection after day 3 of life. This measure is applicable to all eligible infants who were born in 2007 and hospitalized after day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 3.18

**Coagulase Negative Staph Infection by Gestational Age
All Eligible Infants Born in 2007**

Coagulase Negative Staph Infection after day 3 of life. This measure is applicable to all eligible infants who were born in 2007 and hospitalized after day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 3.19**Nosocomial Bacterial Infection by Gestational Age****All Eligible Infants Born in 2007**

Late Bacterial and/or Coagulase Negative Staph Infection after day 3 of life. This measure is applicable to all eligible infants who were born in 2007 and hospitalized after day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 3.20**Fungal Infection by Gestational Age****All Eligible Infants Born in 2007**

Fungal Infection after day 3 of life. This measure is applicable to all eligible infants who were born in 2007 and hospitalized after day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 3.21**Cranial Ultrasound Exam by Gestational Age****All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.22**Intraventricular Hemorrhage by Gestational Age****All Eligible Infants Born in 2007**

Grades 1 to 4 Periventricular-Intraventricular Hemorrhage. This measure applies to all eligible infants who were born in 2007 and had a cranial ultrasound on or before day 28 of life.

Figure 3.23**Severe Intraventricular Hemorrhage by Gestational Age****All Eligible Infants Born in 2007**

Grades 3 or 4 Periventricular-Intraventricular Hemorrhage. This measure applies to all eligible infants who were born in 2007 and had a cranial ultrasound on or before day 28 of life.

Figure 3.24**Periventricular Leukomalacia by Gestational Age****All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007 and had a cranial ultrasound exam prior to discharge.

Figure 3.25**Eye Exams by Gestational Age****All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.26

Retinopathy of Prematurity by Gestational Age

All Eligible Infants Born in 2007

Stages 1 to 4 ROP. This measure applies to all eligible infants who were born in 2007 and had a retinal exam.

Figure 3.27

Severe Retinopathy of Prematurity by Gestational Age

All Eligible Infants Born in 2007

Stages 3 or 4 ROP. This measure applies to all eligible infants who were born in 2007 and had a retinal exam.

Figure 3.28

Any Major Surgery by Gestational Age

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.29

Any Breast Milk at Discharge by Gestational Age

All Surviving Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007 and whose discharge status was home or hospitalized as of first birthday. Note that for infants transferred from and readmitted to your center, Any Breast Milk at Discharge is based on the status at discharge following readmission.

Section 4

Characteristics, Interventions, and Outcomes by Birth Location

**All Eligible Infants at
Expanded Data Centers
2007**

Section 4

Characteristics, Interventions, and Outcomes by Birth Location

All Eligible Infants Born in 2007

The tables and figures in this section show infant characteristics, interventions and outcomes by birth location categories for all eligible infants who were born at centers participating in the Expanded Database in 2007. These categories include inborn, outborn and, if outborn, infants admitted early (on or before day 3 of life) and those admitted later (after day 3). Values for all infants are also shown.

Table 4.1 shows the number of infants for whom the various measures in Section 4 are applicable, by birth location categories and overall. Table 4.2 shows the total number of infants at your center and quartile values (25th and 75th percentiles) for all Expanded Data Centers by birth weight, gestational age and birth location categories. Tables 4.3 to 4.11 report the observed value at your center for the indicated characteristics, interventions and outcomes and the quartile values for all Network Centers. By definition, at least 25% of the centers will have values at or below the 25th percentile and 25% of the centers will have values at or above the 75th percentile.

Table 4.1

Number of Infants for Categories of Measures by Birth Location

All Eligible Infants Born in 2007

Number of infants at your center, by birth location categories and overall, for the various categories of denominators that are applicable to measures in this section. The numbers for CLD for infants with gestational age of 32 weeks or less (Infants < 33 Weeks GA) are the number eligible based on the algorithm described in the introduction to Table 1.2 in Section 1.

Table 4.2

Total Infants, Birth Weight and Gestational Age by Birth Location

All Eligible Infants Born in 2007

Total number of infants and percent of infants in each birth weight and birth location categories for your center with Network quartiles by birth location.

Table 4.3

Infant Characteristics by Birth Location

All Eligible Infants Born in 2007

Characteristics of infants by birth location categories and overall for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the characteristics. The Antenatal Steroids measure GA 24/0 to 33/6 is restricted to infants with gestational ages between 24 and 33 completed weeks gestation. The percent of infants with admission temperature less than 36.5 degrees Celsius is restricted to infants whose temperature was measured within one hour of admission to your NICU. Other measures in this table apply to all eligible infants (Total Infants, Table 4.1).

Table 4.4
Initial Resuscitation by Birth Location
All Eligible Infants Born in 2007

Initial resuscitation by birth location categories and overall for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures. The measures in this table are applicable to all eligible infants (Total Infants, Table 4.1).

Table 4.5
Respiratory Outcomes and Interventions by Birth Location
All Eligible Infants Born in 2007

Respiratory outcomes and interventions by birth location categories and overall for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures. Table 4.1 shows the number of infants at your center for whom these measures are applicable.

The Early CPAP measure is restricted to infants who receive CPAP and indicates whether the infant received continuous positive airway pressure prior to receiving endotracheal tube ventilation. The Vent after Early CPAP measure is restricted to infants who receive Early CPAP and indicates whether the infant received CPAP prior to receiving any ETT ventilation and later received ETT ventilation. The Surfactant after 2 Hours measure is restricted to infants who receive surfactant.

The Oxygen at 28 Days and Oxygen at 36 Weeks measures only apply to infants who, on the date described in the definition of the measure, are in your center, in the transferring center if outborn or in the “transferred to” center if the infant is readmitted. The measure for CLD at 36 Weeks for infants with gestational age less than 33 weeks (CLD 36 < 33) is based on the algorithm for chronic lung disease described in the introduction to Table 1.2 in Section 1. The CLD measure only applies to infants who can be classified based on the algorithm parameters.

The Discharge on Oxygen and Discharge on Monitor measures apply to infants discharged home or transferred.

Table 4.6
Median Days Ventilated by Birth Location and Initial Disposition Status
All Eligible Infants Born in 2007

Median days ventilated from admission to your center until initial disposition for all eligible infants who were born in 2007 by birth location categories and status at initial disposition. The median values for infants at your center and quartile values for all centers participating in the Expanded Database are shown by birth location and initial disposition status (Home, Transfer, Died, All). If the values are ordered from lowest to highest, the median is the middle value. The number of days ventilated only includes days from admission to initial disposition at your center. It does not include days ventilated at the transferring center (for outborn infants), at the “transferred to” center for infants who transfer, or days following transfer for

infants who are readmitted after transfer. Infants still hospitalized as of first birthday are included in the "Home" category.

Table 4.7

Other Outcomes and Interventions by Birth Location

All Eligible Infants Born in 2007

Other outcomes and interventions by birth location categories and overall for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures. Unless otherwise indicated by asterisks and footnotes, the measures reported in this table apply to all infants except those who died in the delivery room/initial resuscitation area.

For infants who receive a Cranial Ultrasound, the Any IVH measure is the percent of infants with grades 1 to 4 Periventricular-Intraventricular Hemorrhage (PIH); the Severe IVH measure is the percent with grades 3 or 4 PIH. The Any ROP measure is the percent of infants with stage 1 to 4 Retinopathy of Prematurity among infants who had a retinal exam performed; the Severe ROP measure is the percent with stage 3 or 4 ROP.

Table 4.8

Surgery by Birth Location

All Eligible Infants Born in 2007

Surgical procedures by birth location categories and overall for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures: PDA Ligation, NEC Surgery, ROP Surgery, Cardiac Surgery, Other Major Surgery, Major Surgery by Category, and Any Major Surgery. Procedures not included in major surgery are also listed. Surgery measures apply to all eligible infants, except those who died in the delivery room/initial resuscitation area.

Table 4.9

Enteral Feeding by Birth Location and Discharge Status

All Eligible Infants Born in 2007

Enteral Feeding at initial disposition (Home, Transfer, Died, All) by birth location categories for all eligible infants who were born in 2007. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the Enteral Feeding categories: Any Human Milk, Formula Only, No Enteral Feeding or Unknown Enteral Feeding. The two sub-categories of Any Human Milk, Human Milk Only and Milk with Formula/Fortifier, are the percent of all infants whose only enteral feeding is breast milk and the percent feeding with both formula/fortifier and breast milk, respectively. Note that for infants transferred from and readmitted to your center, Enteral Feeding at discharge is based on the status at discharge following readmission. The Enteral Feeding measures apply to all infants who did not die in the delivery room/initial resuscitation area and for whom discharge status is known. Infants still in the hospital at one year are included in the Home category of discharge status.

Table 4.10**Average Weight in Grams by Birth Location and Initial Disposition Status
All Eligible Infants Born in 2007**

Average Weight in grams at initial disposition (Home, Transfer, Died, All) by birth location categories for all eligible infants who were born in 2007. The Average Weight at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures. Infants still hospitalized as of first birthday are included in the “Home” category. These measures apply to all infants for whom discharge status is known, except infants who died in the delivery room/initial resuscitation area.

Table 4.11**Median Time to First Dose of Surfactant by Birth Location
All Eligible Infants Born in 2007**

Median Time to First Dose of Surfactant by birth location categories for all eligible infants who were born in 2007. The median Time to First Dose at your center and Network quartile values are shown. If the values are ordered from lowest to highest, the median is the middle value. These measures apply to all eligible infants who receive surfactant.

The figures in this section show summary data for all eligible infants who were born in 2007 by birth location categories; **Figure 4.28** applies to all surviving eligible infants born in 2007. The number or percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures. Your center is represented by a large dot in the figures, indicating the number of infants or the percentage of the characteristic, intervention or outcome for the birth location category. The vertical bars in the figures represent the first and third hospital quartile values (25th and the 75th percentile values) for all Expanded Data Centers. By definition, at least 25% of the centers will have values at or below the 25th percentile and at least 25% of the centers will have values at or above the 75th percentile. If the dot is within the vertical bar, then your center value is between the 25th and 75th percentile values.

Figure 4.1**Number of Admissions by Birth Location
All Eligible Infants Born in 2007**

These admissions refer to all eligible infants who were born in 2007.

Figure 4.2**C-Section by Birth Location
All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007.

Figure 4.3**Conventional Ventilation by Birth Location
All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.4
High Frequency Ventilation by Birth Location
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.5
High Flow Nasal Cannula by Birth Location
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.6
Nasal IMV or SIMV by Birth Location
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.7
Pneumothorax by Birth Location
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.8
Surfactant at Any Time by Birth Location
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007.

Figure 4.9
First Dose of Surfactant after 2 Hours by Birth Location
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007 and receive surfactant.

Figure 4.10
ECMO by Birth Location
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.11
Nitric Oxide by Birth Location
All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.12**Chronic Lung Disease in Infants < 33 Weeks GA by Birth Location****All Eligible Infants Born in 2007**

Chronic lung disease (CLD) at 36 weeks corrected gestational age for eligible infants who were born in 2007, restricted to infants whose gestational age is less than 33 weeks. The number of infants for whom this measure applies is based on the gestational age restriction and the algorithm described in the introduction to Section 1, Table 1.2.

Figure 4.13**Patent Ductus Arteriosus by Birth Location****All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.14**Indomethacin by Birth Location****All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.15**Early Bacterial Infection by Birth Location****All Eligible Infants Born in 2007**

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.16**Late Bacterial Infection by Birth Location****All Eligible Infants Born in 2007**

Late Bacterial Infection after day 3 of life. This measure is applicable to all eligible infants who were born in 2007 and hospitalized after day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 4.17**Coagulase Negative Staph Infection by Birth Location****All Eligible Infants Born in 2007**

Coagulase Negative Staph Infection after day 3 of life. This measure is applicable to all eligible infants who were born in 2007 and hospitalized after day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 4.18**Nosocomial Bacterial Infection by Birth Location****All Eligible Infants Born in 2007**

Late Bacterial and/or Coagulase Negative Staph Infection after day 3 of life. This measure is applicable to all eligible infants who were born in 2007 and hospitalized after

day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 4.19

Fungal Infection by Birth Location

All Eligible Infants Born in 2007

Fungal Infection after day 3 of life. This measure is applicable to all eligible infants who were born in 2007 and hospitalized after day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 4.20

Cranial Ultrasound Exam by Birth Location

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.21

Intraventricular Hemorrhage by Birth Location

All Eligible Infants Born in 2007

Grades 1 to 4 Periventricular-Intraventricular Hemorrhage. This measure applies to all eligible infants who were born in 2007 and had a cranial ultrasound on or before day 28 of life.

Figure 4.22

Severe Intraventricular Hemorrhage by Birth Location

All Eligible Infants Born in 2007

Grades 3 or 4 Periventricular-Intraventricular Hemorrhage. This measure applies to all eligible infants who were born in 2007 and had a cranial ultrasound on or before day 28 of life.

Figure 4.23

Periventricular Leukomalacia by Birth Location

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007 and had a cranial ultrasound exam prior to discharge.

Figure 4.24

Eye Exams by Birth Location

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.25

Retinopathy of Prematurity by Birth Location

All Eligible Infants Born in 2007

Stages 1 to 4 ROP. This measure applies to all eligible infants who were born in 2007 and had a retinal exam.

Figure 4.26

Severe Retinopathy of Prematurity by Birth Location

All Eligible Infants Born in 2007

Stages 3 or 4 ROP. This measure applies to all eligible infants who were born in 2007 and had a retinal exam.

Figure 4.27

Any Major Surgery by Birth Location

All Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.28

Any Breast Milk at Discharge by Birth Location

All Surviving Eligible Infants Born in 2007

This measure applies to all eligible infants who were born in 2007 and whose discharge status was home or hospitalized as of first birthday. Note that for infants transferred from and readmitted to your center, Any Breast Milk at discharge is based on the status at discharge following readmission.

Section 5

Lists of Infants with Selected Characteristics, Interventions and Outcomes

All Eligible Infants at Expanded Data Centers 2007

Section 5

Lists of Infants with Selected Characteristics, Interventions and Outcomes

All Eligible Infants Born in 2007

Tables 5.1 to 5.4 list infants at your center with selected characteristics. Tables 5.5 to 5.10 list infants at your center with outcomes which appear on the Vermont Oxford Network Supplemental Data Form. These include infants who are at or above the 90th percentile for duration of assisted ventilation within their gestational age category for all Expanded Data Centers (Table 5.5), infants who receive extracorporeal membrane oxygenation (ECMO, Table 5.6), infants who receive nitric oxide (Table 5.7), infants with hypoxic-ischemic encephalopathy (Table 5.8), infants with meconium aspiration syndrome (Table 5.9) and infants with seizures (Table 5.10).

Table 5.1

Infant List: Surgery

All Eligible Infants Born in 2007 Who Had Any Surgery

List of all eligible infants at your center who had surgery, in order of increasing Patient ID number. The list includes Birth Weight in grams, Gestational Age in completed weeks, Birth Location (Inborn or Outborn), Day of Admission for outborn infants, Survival Status (Alive, Died, Unknown) and a description of all surgeries performed.

Table 5.2

Infant List: Major Birth Defects

All Eligible Infants Born in 2007 with Major Birth Defects

List of all eligible infants at your center in order of patient ID. The list includes Birth Weight in grams, Gestational Age in completed weeks, Birth Location, Day of Admission for outborn infants, Survival Status, and description of birth defect(s).

Table 5.3

Infant List: Admission Temperature Less Than 36.5°C

All Eligible Infants Born in 2007 with Admission Temperature Less Than 36.5°C

List of all eligible infants at your center with admission temperature less than 36.5°C. The list is ordered by admission temperature and also shows Gestational Age in completed weeks, Birth Weight in grams, Birth Location, Day of Admission for outborn infants, APGAR scores at one and five minutes, and type of delivery.

Table 5.4

Infant List: Growth Measures

All Eligible Infants Born in 2007 and Discharged Home or Transferred from Your Center with No Major Birth Defect and between 15 and 159 Days to Initial Disposition

List of eligible infants at your center whose initial disposition was "Home" or "Transferred" and whose initial LOS was between 15 and 159 days. Infants with birth defects are excluded as are infants whose Initial Disposition is "Died". The list is ordered by patient ID and also shows gestational age in completed weeks, SGA, birth location, days to initial

LOS, birth and discharge weights in grams, head circumference at birth and discharge in centimeters, and head growth per week in centimeters.

Table 5.5

**Infant List: Duration of Assisted Ventilation Greater than the 90th Percentile
All Eligible Infants Born in 2007**

For infants ventilated at your center, list of those in each gestational age category who are at or above the 90th percentile for duration of assisted ventilation at all Expanded Data Centers within that category. By definition, at least 10 percent of the infants ventilated at all Expanded Data Centers will be in the 90th percentile for duration of assisted ventilation within each gestational age category (< 24, 24-26, 27-29, 30-32, 33-36, 37-41, > 41). The list is ordered by gestational age in completed weeks (GA Weeks), and also includes Patient ID number, Birth Weight in grams, Birth Location (Inborn or Outborn), Day of Admission for outborn infants, Major Birth Defect (Yes or No), Chest Compression in the Delivery Room (Chest Comp, Yes or No), APGAR score at 1 minute (AP1) and at 5 minutes (AP5), Conventional Ventilation (Conv Vent, Yes or No), High Frequency Ventilation (HIFI Vent, Yes or No), Pneumothorax (PNTX, Yes or No), Survival Status (Alive, Died, Unknown), the value of the 90th percentile at all expanded data centers in days for the infant's gestational age (Network 90th Percentile) and the number of Days Ventilated for the infant.

Table 5.6

**Infant List: ECMO
All Eligible Infants Born in 2007**

List of infants at your center who were treated with ECMO. The list is ordered by patient ID number, and also includes Birth Weight in grams, gestational age in completed weeks (GA, Weeks), Birth Location (Inborn or Outborn), Day of Admission for outborn infants, Major Birth Defect (Yes or No), Chest Compression in the Delivery Room (Chest Comp, Yes or No), APGAR score at 1 minute (AP1), APGAR score at 5 minutes (AP5), Conventional Ventilation (Conv Vent, Yes or No), High Frequency Ventilation (HIFI Vent, Yes or No), Days Ventilated, Survival Status (Alive, Died or Unknown) and the location where ECMO was done (ECMO, Where Done: Your Center, Other Center, or Unknown).

Table 5.7

**Infant List: Nitric Oxide
All Eligible Infants Born in 2007**

List of infants at your center for whom inhaled nitric oxide was used. The list is ordered by patient ID number, and also includes Birth Weight in grams, gestational age in completed weeks (GA, Weeks), Birth Location (Inborn or Outborn), Day of Admission for outborn infants, Major Birth Defect (Yes or No), Chest Compression in the Delivery Room (Chest Comp, Yes or No), APGAR score at 1 minute (AP1), APGAR score at 5 minutes (AP5), Conventional Ventilation (Conv Vent, Yes or No), High Frequency Ventilation (HIFI Vent, Yes or No), Days Ventilated, Survival Status (Alive, Died or Unknown) and the location where nitric oxide was used (Nitric Oxide, Where Done: Your Center, Other Center or Unknown).

Table 5.8**Infant List: Hypoxic-Ischemic Encephalopathy****All Eligible Infants Born in 2007**

List of infants at your center with Hypoxic-Ischemic Encephalopathy (HIE). The list is ordered by patient ID number, and also includes Birth Weight in grams, gestational age in completed weeks (GA, Weeks), birth location (Inborn or Outborn), Day of Admission for outborn infants, Major Birth Defect (Yes or No), chest compression in the delivery room (Chest Comp, Yes or No), APGAR score at 1 minute (AP1), APGAR score at 5 minutes (AP5), Seizure (Yes or No), Meconium Aspiration Syndrome (Yes or No), Days Ventilated, Survival Status (Alive, Died or Unknown) and the HIE Severity (Mild, Moderate, Severe, Unknown). Please note that the HIE measure applies only to infants whose gestational age is 36 weeks or more.

Table 5.9**Infant List: Meconium Aspiration Syndrome****All Eligible Infants Born in 2007**

List of infants at your center with meconium aspiration syndrome. The list is ordered by patient ID number, and also includes Birth Weight in grams, gestational age in completed weeks (GA, Weeks), birth location (Inborn or Outborn), Day of Admission for outborn infants, Major Birth Defect (Yes or No), chest compression in the delivery room (Chest Comp, Yes or No), APGAR score at 1 minute (AP1), APGAR score at 5 minutes (AP5), Seizure (Yes or No), Days Ventilated, Survival Status (Alive, Died or Unknown) and whether the infant was Suctioned for meconium (YES, NO or Unknown).

Table 5.10**Infant List: Seizure****All Eligible Infants Born in 2007**

List of infants at your center with a seizure. The list is ordered by patient ID number, and also includes Birth Weight in grams, gestational age in completed weeks (GA, Weeks), birth location (Inborn or Outborn), Day of Admission for outborn infants, Major Birth Defect (CMAL, Yes or No), chest compression in the delivery room (Chest Comp, Yes or No), APGAR score at 1 minute (AP1), APGAR score at 5 minutes (AP5), Meconium Aspiration Syndrome (Yes or No), hypoxic-ischemic encephalopathy (HIE: Yes, No, N/A or Unknown), Days Ventilated and Survival Status (Died, Yes or No). Please note that HIE is not applicable (N/A) for infants whose gestational age is less than 36 weeks.

Section 6

Disposition Status, Mortality, and Morbidity among Surviving Infants

**All Eligible Infants at
Expanded Data Centers
2007**

Section 6

Disposition Status, Mortality and Morbidity among Surviving Infants All Eligible Infants Born in 2007

The figures and tables in this section provide information on disposition status, mortality and morbidity in surviving infants for all eligible infants who were born at centers participating in the Expanded Database in 2007. Observed percentages at your center and the quartiles for all Expanded Data Centers are presented by birth weight category (grams) in Tables 6.1 and 6.2 and in Figure 6.1, by gestational age category (completed weeks) in Tables 6.3 and 6.4 and in Figure 6.2, and by birth location categories in Tables 6.5 and 6.6 and in Figure 6.3. These categories include inborn, outborn, and, if outborn, infants admitted early (on or before day 3 of life) and those admitted later (after day 3).

These tables and figures show the percentage of infants with the outcome and the quartile percents (25th and 75th percentiles) for all Expanded Data Centers. By definition, at least 25% of the Expanded Data Centers have event percentages at or below the first quartile (25th percentile) and at least 25% of the centers have event percentages at or above the 3rd quartile (75th percentile). Your center is indicated by a large dot in the figures, and the vertical bars represent the Network quartiles. If the dot is within the vertical bar, your center is between the 25th and 75th percentiles for all Expanded Data Centers. The numbers of infants for whom measures in this section are reported are tabulated by birth weight category in Section 2, Table 2.1, by gestational age category in Section 3, Table 3.1 and by birth location in Section 4, Table 4.1. Tables 6.7 and 6.8 list the infants who died and the infants who had unknown survival status, respectively.

Table 6.1

Disposition Status by Birth Weight

All Eligible Infants Born in 2007

Disposition status indicators for your center and hospital quartile values among all eligible infants who were born at centers participating in the Expanded Database in 2007. The measures are shown by birth weight category and overall. The disposition categories include status at Initial Disposition for all infants (Discharge Status: Home, Transfer, Died, Unknown), post transfer disposition among infants who transferred (Status of Transfers: Home, Transfer, Died, Readmit, Unknown), Reason for Transfer for infants who transferred (Growth, Medical/DX, Surgery, Chronic Care, Other, Unknown) and final disposition status for all infants (Survival Status: Died, Alive, Unknown). Final disposition status is the same as initial disposition status for infants who do not transfer. Infants who are still hospitalized as of first birthday are classified as "Alive" or "Home." The numbers of infants considered in calculating these measures are shown in Table 2.1.

Figure 6.1

Mortality by Birth Weight

All Eligible Infants Born in 2007

Percentage of all infants who died at your center and hospital quartile values among all eligible infants who were born at centers participating in the Expanded Database in 2007 by birth weight category.

Table 6.2

Morbidity among Surviving Infants by Birth Weight

All Eligible Infants Born in 2007

The percent of infants who survived and, among those who survived, the percent at your center and hospital quartile values among infants who had selected morbidities or Extreme Length of Stay (Extreme LOS), by birth weight category. The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures by birth weight category and overall. Some hospitals with missing data may not receive information in this table.

The Morbidity in Survivors measures are reported as a percentage of all surviving infants and include the measures listed below.

- Severe IVH: percent of infants who had grades 3 or 4 Periventricular-Intraventricular Hemorrhage (PIH).
- Chronic Lung Disease (CLD) for infants whose gestational age is less than 33 weeks (CLD 36 < 33): this measure is based on the algorithm, described in the introduction to Section 1, Table 1.2, to more precisely estimate oxygen at 36 weeks, by accounting for infants discharged home or transferred prior to 36 weeks.
- Necrotizing Enterocolitis (NEC).
- Pneumothorax.
- Infection: Late Bacterial, Coagulase Negative Staph or Fungal Infection after day 3 of life, either Late Bacterial and/or Coagulase Negative Staph Infection (Nosocomial Infection) and any of the three late infections (Any Late Infection).
- Periventricular Leukomalacia (PVL).
- Extreme LOS: observed Total Hospital Stay greater than the 90% upper bound for the infant's predicted Total Hospital Stay, based on the risk adjustment model discussed in Section 7, Figure 7.4. Note that infants with Extreme LOS are listed in Section 7, Table 7.7.

Table 6.3

Disposition Status by Gestational Age

All Eligible Infants Born in 2007

Disposition status indicators by gestational age category and overall for all eligible infants who were born at centers participating in the Expanded Database in 2007. The numbers of infants considered in calculating these measures are shown in Table 3.1.

Figure 6.2**Mortality by Gestational Age****All Eligible Infants Born in 2007**

Percentage of all infants who died at your center and Network quartile percents among all eligible infants who were born at centers participating in the Expanded Database in 2007 by gestational age category.

Table 6.4**Morbidity among Surviving Infants by Gestational Age****All Eligible Infants Born in 2007**

The percent of infants who survived and, among those who survived, the percent at your center and hospital quartile values among infants who had selected morbidities or Extreme Length of Stay (Extreme LOS). The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures by gestational age category. Some hospitals with missing data may not receive information in this table.

Table 6.5**Disposition Status by Birth Location****All Eligible Infants Born in 2007**

Disposition status indicators by birth location categories and overall for all eligible infants who were born at centers participating in the Expanded Database in 2007. The numbers of infants considered in calculating these measures are shown in Table 4.1.

Figure 6.3**Mortality by Birth Location****All Eligible Infants Born in 2007**

Percentage of all infants who died at your center and Network quartile percents among all eligible infants who were born at centers participating in the Expanded Database in 2007 by birth location categories.

Table 6.6**Morbidity among Surviving Infants by Birth Location****All Eligible Infants Born in 2007**

The percent of infants who survived and, among those who survived, the percent at your center and hospital quartile values among infants who had selected morbidities or Extreme Length of Stay (Extreme LOS). The percent of infants at your center and quartile values for all centers participating in the Expanded Database are shown for each of the measures by birth location categories and overall. Some hospitals with missing data may not receive information in this table.

Table 6.7

Infant List: Mortality

All Eligible Infants Born in 2007

List of infants at your center who died. The list includes Birth Weight, Gestational Age in completed weeks, Birth Location (Inborn or Outborn), Day of Admission for outborn infants, Small for Gestational Age (GA, Yes or No), Major Birth Defect (Yes, No, Unknown), Probability of Death (Low, Moderate, High), and whether the infant received Life Support (Yes or No).

Table 6.8

Infant List: Unknown Survival Status

All Eligible Infants Born in 2007

List of infants at your center with unknown survival status. The list includes Birth Weight, Gestational Age in completed weeks, Birth Location (Inborn or Outborn), Day of Admission for outborn infants, Small for Gestational Age (GA, Yes or No), Major Birth Defect (Yes or No), Discharge Status at initial disposition and Survival Status.

Section 7

Length of Stay

**All Eligible Infants at
Expanded Data Centers
2007**

Section 7

Length of Stay

All Eligible Infants Born in 2007

The tables and figures in this section report length of stay (LOS) measures in days for all eligible infants who were born at centers participating in the Expanded Database in 2007. Observed measures include Initial LOS and Total Hospital Stay. Initial LOS is the number of days from admission to your center until discharge, transfer or death and is based on the number of days reported by your center for each infant on the Discharge Form. Total Hospital Stay includes days at your hospital and at other hospitals until discharge, death or first birthday, whichever is soonest. When infants transfer, Total Hospital Stay includes days prior to admission to your center if outborn and days following transfer to another hospital if applicable. For inborn infants who do not transfer, Total Hospital Stay is equivalent to Initial Length of Stay. For reports in this section which include deaths, infants who die in the delivery room/initial resuscitation area are considered to have Initial LOS and Total Hospital Stay of one day.

Tables 7.1 to 7.6 show the observed average length of stay measures at your center and the first and third quartile values (25th and 75th Percentile) for all Expanded Data Centers. By definition, at least 25% of the Expanded Data Centers have length of stay at or below the 25th percentile and at least 25% of the centers have length of stay at or above the 75th percentile. Initial LOS is tabulated by Initial Disposition Status (Home, Transferred, Died, All); Total Hospital Stay is tabulated by Final Discharge Status (Home, Died, All). Infants still hospitalized as of first birthday are included in the "Home" category. The measures are shown by birth weight in Tables 7.1 and 7.2, by gestational age in Tables 7.3 and 7.4, and by birth location in Tables 7.5 and 7.6

Figures 7.1 and 7.2 show the median Total Hospital Stay for surviving infants by birth weight and gestational age categories. If the LOS values are ordered from lowest to highest, the median is the middle value. Because the distribution of length of stay measures is often skewed, the median may be a better indication of central tendency than the average (mean) value. Your center median values are represented by large dots in the figures. The Network quartiles are represented by vertical bars, indicating the 25th to the 75th percentiles. If the dot is within the vertical bar, then your center median value is between the 25th and 75th percentiles for LOS medians at all Expanded Data Centers.

Figure 7.4 reports the Adjusted Average Total Hospital Stay at your center and for all Expanded Data Centers for surviving infants who were born in 2007. The Adjusted Average Total Hospital Stay at your center is represented by a black dot in the figure; other Expanded Data Centers are represented by dashes (-). The 95% confidence limits for the Adjusted Total Hospital Stay values are represented by the error bars. The centers are arranged in order of increasing LOS.

Table 7.7 lists infant records for surviving infants where the observed Total Hospital Stay is considered extreme because it exceeds the 90th percentile for the predicted value based on the multivariable risk adjustment model described for Figure 7.4. Table 7.8 lists

infants whose Total Hospital Stay is 3 days or less. Table 7.9 lists infants with unknown Total Hospital Stay.

Please note that the numbers of infants for measures in this section are shown by birth weight category in Section 2, Table 2.1, by gestational age category in Section 3, Table 3.1 and by birth location in Section 4, Table 4.1.

Table 7.1

Days in Hospital by Final Disposition, Admission Status, and Birth Weight All Eligible Infants Born in 2007

Days in hospital for infants by birth weight category and admission status. Admission status consists of Before Admission (applies to outborn infants only), During 1st Admission (applies to all infants), and After Transfer (applies to transferred infants only). After Transfer is broken down into three sub-categories: Infants Not Readmitted, Infants Readmitted, and All Transfers. The N and Mean for each category are provided for your center, as well as Network quartiles. Infants still hospitalized as of first birthday are included in the Home category.

Table 7.2

Average Total Hospital Stay by Birth Weight and Final Disposition Status All Eligible Infants Born in 2007

Average observed Total Hospital Stay in days for infants at your center and Network quartiles, by birth weight category and final disposition status.

Figure 7.1

Median Total Hospital Stay by Birth Weight All Surviving Eligible Infants Born in 2007

Median observed Total Hospital Stay in days for surviving infants at your center and Network quartiles, by birth weight category.

Table 7.3

Days in Hospital by Final Disposition, Admission Status, and Gestational Age All Eligible Infants Born in 2007

Days in hospital for infants by gestational age category and admission status. Admission status consists of Before Admission (applies to outborn infants only), During 1st Admission (applies to all infants), and After Transfer (applies to transferred infants only). After Transfer is broken down into three sub-categories: Infants Not Readmitted, Infants Readmitted, and All Transfers. The N and Mean for each category are provided for your center, as well as Network quartiles. Infants still hospitalized as of first birthday are included in the Home category.

Table 7.4

Average Total Hospital Stay by Gestational Age and Final Disposition Status All Eligible Infants Born in 2007

Average observed Total Hospital Stay in days for infants at your center and Network quartiles, by gestational age and final disposition.

Figure 7.2**Median Total Hospital Stay by Gestational Age****All Surviving Eligible Infants Born in 2007**

Median observed Total Hospital Stay in days for surviving infants at your center and Network quartiles, by gestational age category.

Table 7.5**Days in Hospital by Final Disposition, Admission Status, and Birth Location****All Eligible Infants Born in 2007**

Days in hospital for infants by birth location categories and admission status. Birth location categories include inborn, outborn and, if outborn, infants admitted early (on or before day 3 of life) and those admitted later (after day 3). Admission status consists of Before Admission (applies to outborn infants only), During 1st Admission (applies to all infants), and After Transfer (applies to transferred infants only). After Transfer is broken down into three sub-categories: Infants Not Readmitted, Infants Readmitted, and All Transfers. The N and Mean for each category are provided for your center, as well as Network quartiles. Infants still hospitalized as of first birthday are included in the Home category.

Table 7.6**Average Total Hospital Stay by Birth Location and Final Disposition Status****All Eligible Infants Born in 2007**

Average observed Total Hospital Stay in days for infants at your center and Network quartiles, by birth location categories and final disposition status.

Figure 7.3**Median Total Hospital Stay by Birth Location****All Surviving Eligible Infants Born in 2007**

Median observed Total Hospital Stay in days for surviving infants at your center and Network quartiles, by birth location.

Figure 7.4**Adjusted Average Total Hospital Stay (LOS)****All Surviving Eligible Infants Born in 2007**

Adjusted average Total Hospital Stay at all Expanded Data Centers for surviving infants who were born in 2007. The adjusted Total Hospital Stay for each hospital is calculated using analysis of covariance. A multivariable model is used to predict the logarithm of Total Hospital Stay. This equation includes the following variables: Birth Weight in grams, Ventilated (conventional or high frequency - Yes or No), RDS (Yes or No), Surgery (other than eye surgery - Yes or No), 1 Minute APGAR Score (0 to 10), Small for Gestational Age (Yes or No), Reason for Transfer (no transfer, transfer for surgery or transfer for reasons other than surgery), Vaginal Delivery (Yes or No), Birth Location (Inborn or Outborn), Sex (Female or Male), Prenatal Care (Yes or No), Maternal Race/Ethnicity (Asian, Black, Hispanic, White, Other), and Major Birth Defect (Yes or No).

The geometric mean is similar in value to the median and reduces the influence of outlier values which occur in a few cases of very long length of stay. The adjusted Total Hospital Stay for each hospital can be interpreted as the average Total Hospital Stay

(geometric mean) that would have occurred, had the hospital treated a Network of infants with the same characteristics as surviving infants in the Network as a whole. Please note that this figure includes those hospitals in the Database for 2007 for whom adjusted average Total Hospital Stay could be calculated. Some hospitals with missing data will not receive this figure.

Table 7.7

Infant List: Total Hospital Stay Exceeds the 90% Confidence Limit for the Predicted Value

All Surviving Eligible Infants Born in 2007

List of surviving infants at your center whose observed Total Hospital Stay exceeds the 90% upper bound for the predicted value. The predicted value and its confidence limit are based on the multivariable risk-adjusted model discussed above for Figure 7.4, which includes the following infant characteristics: birth weight, ventilated (conventional or high frequency, yes or no), respiratory distress syndrome (yes or no), surgery other than eye surgery (yes or no), APGAR score at 1 minute, small for gestational age (yes or no), reason for transfer (not transferred, transferred for surgery or transferred not for surgery), mode of delivery (vaginal, c-section), infant gender, any prenatal care (yes or no), maternal race/ethnicity (Asian, Black, Hispanic, White, Other), major birth defect (yes or no) and birth location (outborn or inborn). The list is ordered by Patient ID Number and includes Birth Weight, Gestational Age (GA) in completed weeks, Birth Location (Inborn or Outborn), Day of Admission, Small for GA (Yes or No), Birth Defect (Yes, No, Unknown), Discharge Status from your center (Home, Transfer, Unknown), Reason for Transfer if infant transferred (Growth/Discharge Planning, Medical/Diagnostic Services, Surgery, Chronic Care or Other), Observed Total Hospital Stay in days and the 90% upper bound for the predicted value (days).

Table 7.8

Infant List: Surviving Infants with Total Hospital Stay of 3 Days or Less

All Surviving Eligible Infants Born in 2007

List of surviving infants at your center whose Total Hospital Stay was 3 days or less. The list is ordered by Patient ID number and also includes Birth Weight, Gestational Age (GA) in completed weeks, Birth Location (Inborn or Outborn), Day of Admission for outborn infants, Small for GA (Yes or No), Birth Defect (Yes, No, Unknown), Discharge Status from your center (Home, Transfer, Unknown), Reason for Transfer if infant transferred (Growth/Discharge Planning, Medical/Diagnostic Services, Surgery, Chronic Care or Other), and Observed Total Hospital Stay in days.

Table 7.9

Infant List: Unknown Total Hospital Stay

All Eligible Infants Born in 2007

List of infants at your center with unknown Total Hospital Stay. The list is ordered by Patient ID number and also includes Birth Weight, Gestational Age in completed weeks, Birth Location (Inborn or Outborn), Day of Admission for outborn infants, Birth Defect (Yes, No, Unknown), Discharge Status (Home, Transfer, Died, Hosp > 1 Yr, Unknown), and Survival Status (Home, Died, Hosp > 1 Yr, Unknown).

Section 8

Trends from 2001 to 2007

**All Eligible Infants at
Expanded Data Centers**

Section 8

Trends from 2001 to 2007

All Eligible Infants

Figures 8.1 to 8.15 show outcomes and interventions for the period 2001 to 2007 and may be useful as quality indicators for identifying trends over time. Network data are presented for all years. Data for your center depends on the length of time your center has participated in the Database. Centers participating since 2001 will have data for all years shown; those that joined later will have fewer years of data.

Figure 8.1

Prenatal Care

All Eligible Infants Born 2001 to 2007

This measure applies to all eligible infants.

Figure 8.2

Inborn Births

All Eligible Infants Born 2001 to 2007

This measure applies to all eligible infants.

Figure 8.3

C-Section

All Eligible Infants Born 2001 to 2007

This measure applies to all eligible infants.

Figure 8.4

Pneumothorax

All Eligible Infants Born 2001 to 2007

This measure applies to all eligible infants, except infants who died in the delivery room/initial resuscitation area.

Figure 8.5

Necrotizing Enterocolitis

All Eligible Infants Born 2001 to 2007

This measure applies to all eligible infants, except infants who died in the delivery room/initial resuscitation area.

Figure 8.6

Late Bacterial Infection

All Eligible Infants Born 2001 to 2007

Late Bacterial Infection after day 3 of life. This measure is applicable to infants who were hospitalized after day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 8.7

**Coagulase Negative Staph Infection
All Eligible Infants Born 2001 to 2007**

Coagulase Negative Staph Infection after day 3 of life. This measure is applicable to infants who were hospitalized after day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 8.8

**Nosocomial Infection
All Eligible Infants Born 2001 to 2007**

Late Bacterial and/or Coagulase Negative Staph Infection after day 3 of life. This measure is applicable to infants who were hospitalized after day 3 of life either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.

Figure 8.9

**Any Major Surgery
All Eligible Infants Born 2001 to 2007**

This figure shows the percent of infants who had ROP, NEC, PDA ligation, or other major surgery and applies to all eligible infants, except infants who died in the delivery room/initial resuscitation area.

Figure 8.10

**Chronic Lung Disease in Infants < 33 Weeks GA
All Eligible Infants Born 2001 to 2007**

This measure applies to infants who meet the conditions defined in the CLD algorithm described in Section 1, Table 1.2.

Figure 8.11

**ECMO
All Eligible Infants Born 2001 to 2007**

This measure applies to all eligible infants, except infants who died in the delivery room/initial resuscitation area.

Figure 8.12

**Nitric Oxide
All Eligible Infants Born 2001 to 2007**

This measure applies to all eligible infants, except infants who died in the delivery room/initial resuscitation area.

Figure 8.13

**Meconium Aspiration
All Eligible Infants Born 2001 to 2007**

This measure applies to all eligible infants.

Figure 8.14

Seizure

All Eligible Infants Born 2001 to 2007

This measure applies to all eligible infants, except infants who died in the delivery room/initial resuscitation area.

Figure 8.15

Mortality

All Eligible Infants Born 2001 to 2007

This measure applies to all eligible infants.

Section 9

Final Quarterly Report and Data Completeness Report

All Eligible Infants at Expanded Data Centers 2007

Section 9

Final Quarterly Report and Data Completeness Report All Eligible Infants Born in 2007

Table 9.1

Final Quarterly Report, All Eligible Infants Born in 2007

The final Expanded Database quarterly births report for your center in 2007 provides data for all eligible infants who were born in the calendar years 2006 and 2007 and treated at your center, as well as data for all eligible infants who were born in 2007 and treated at all Expanded Data Centers combined. This report is in the same format as the Network Quarterly Reports and represents a final update of the fourth quarter report for 2007. For measures on pages 1 through 9 and 11 and 12, the number of infants for whom the data are applicable and the percent of infants with the outcome are shown. For measures on page 10, the means and standard deviations are given.

Table 9.2

Data Completeness Report, All Eligible Infants Born in 2007

For each item on the 28 Day Form, Discharge Form, Transfer and Readmission Form, and Supplemental Data Form, the number of responses received for the item and the percent of infant records with missing values for the item in 2007 are shown.

Table 9.2 also reports the number and percent missing for the chronic lung disease variable, which is an estimate of chronic lung disease at 36 weeks for infants with gestational age less than 33 weeks (CLD36 < 33) based on the algorithm described in the introduction to Section 1, Table 1.2.