

Vermont Oxford Network

**2007 Very Low Birth Weight
Quality Management Report**

Introduction

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Introduction

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Introduction

The 2007 Annual NICU Quality Management Report for VLBW Infants at your center includes information concerning the outcomes and interventions for very low birth weight (VLBW) infants who were born between January 1 and December 31, 2007. VLBW infants are those with birth weights between 401 and 1500 grams and/or gestational age between 22 and 29 completed weeks. Center specific data for these infants are presented and compared to data collected at all neonatal intensive care units (NICUs) participating in the Vermont Oxford Network VLBW Database in 2007. Section 5 of this report also compares measures at your center to all NICUs of your center's NICU Type. A separate report which includes data for all eligible NICU infants, including those with birth weights over 1500 grams, is prepared for those centers participating in the Expanded Database.

During 2007, over 54,000 infants with birth weights between 401 and 1500 grams and/or with gestational age between 22 and 29 weeks were born at 682 participating hospitals or were admitted within 28 days of birth. A list of participating centers is included in this introductory section. The characteristics of Network centers and the information for the entire Network combined are presented in the Vermont Oxford Network 2007 VLBW Database Summary, published separately.

Data for infants with birth weights less than or equal to 500 grams were included in the Database for the first time in 1996 and collection of data for all infants with gestational age between 22 and 29 weeks, regardless of birth weight, began in 2005. To maintain consistency with Network reports from previous years, the information for infants with birth weights less than 500 grams is reported separately in Section 10 of this report and the information for all infants with completed gestational ages between 22 and 29 weeks is reported separately in Section 11. Section 12, which includes the final Quarterly Report for

your center, applies to all eligible VLBW infants. The graphs and tables in other sections include infants with birth weights 501 to 1500 grams as in previous years.

Each section of the report begins with an introduction which includes the contents of the section and a brief explanation. Please note that unless otherwise stated, the figures and tables do not include infants for whom data are missing or not applicable. For example, most of the data items on the Discharge Form are not applicable for infants who die in the delivery room/initial resuscitation area. To clarify the number of infants for whom the measures are applicable, many of the sections include a table at the beginning of the section 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, percentiles 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, and random variation due to small numbers may cause 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, and these differences in case mix may account for differences in patient outcomes among NICUs. This report attempts to account for case mix in several ways:

- (1) Outcomes and interventions are reported by birth weight and gestational age categories. For VLBW infants these variables are highly associated with risks for morbidity and mortality.
- (2) Some outcomes and length of stay are reported by disposition status (Home, Transfer, Died, etc.), since the disposition of the infants is predictive of the result.
- (3) 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 infants 501

to 1500 grams who were born between 2005 and 2007. Table 1.5 and Figure 1.16 report the same results for infants 501 to 1500 grams who were born 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. In addition, the SMRs and confidence intervals have 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 and filter random variation.

- (4) Measures of the number of observed cases minus the number of expected cases (O-E) for infants 501 to 1500 grams who were born between 2005 and 2007 are reported in Table 1.4 and Figures 1.2 to 1.15 for each of the key outcomes. As in Figure 1.1, the number of expected cases is based on a multivariable risk adjustment model, and the O-E values have been shrunk to filter random variation. Similar results for infants born in 2007 can be found in Table 1.5 and Figures 1.17 to 1.30.
- (5) Section 5 compares your hospital to NICUs with the same NICU Type as your center.
- (6) For total hospital stay in surviving infants with birth weights between 501 and 1500 grams (Section 8, Figure 8.4), a multivariable risk adjustment model is used to adjust for case mix differences among units.
- (7) Trends in outcome and practice over time for the last 10 years are reported for your unit and the Network as a whole in Section 9.

It is important to realize that these risk adjustment methods are imperfect - even the best statistical risk models cannot adjust for all of the differences in case mix among NICUs, nor can they filter all of the random variation. Given these caveats, however, 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 included in Section 6 and other sections of the report can be used to identify individual cases for audit and review.

This annual report is 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. Standardized data forms or electronic data records are completed at participating centers, reviewed for eligibility and missing items and entered into the Network Database using customized software that applies specific logic, range and consistency checks. Forms or electronic records requiring revision are returned to the participating center for correction. Quarterly data reports are routinely prepared for all Network participants. If you have any questions, please contact:

Jeffrey D. Horbar, MD
Chief Executive and Scientific Officer

or

A. Lynn Stillman
Administrative Director
E-Mail: lynn@vtoxford.org

Vermont Oxford Network
33 Kilburn Street
Burlington, Vermont 05401
(802) 865-4814

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 ANNUAL REPORT

Austria

Feldkirch	Landeskrankenhaus, Academic Teaching Hospital
Graz	Univ-Klinik Fur Kinder U. Jugendheilkunde
Innsbruck	University Klinik F. Kinder
Linz	Landeskinderklinik Linz
Salzburg	EBZ LKA Salzburg
St. Poelten	Neonatologie Landeskrankenhaus St. Poelten
Vienna	Danube Hospital-SMZ-Ost
Vienna	Kinderklinik Glanzing im Wilhelminenspital
Vienna	University Hospital Vienna - AKH

Belgium

Genk	ZOL St. Jan
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Brazil

Rio De Janeiro	Laranjeiras Perinatal Clinic
Sao' Paulo	Hospital e Maternidade Santa Joana

Canada

Newfoundland

St. John	Janeway Children's Hospital Centre
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Nova Scotia

Halifax	IWK Health Centre
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Ontario

Ottawa	OH-CHEO
Toronto	Mt. Sinai Hospital
Toronto	Sunnybrook Health Sciences Centre
Windsor	Windsor Regional Hospital

Chile

Santiago	Hospital San Jose'
Santiago	Hospital Sotero Del Rio
Santiago	Neored - Santiago

China

Hong Kong	Queen Mary Hospital
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Czech Republic

Prague	University Hospital Motol
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Finland

Helsinki	Hospital for Children
Kuopio	Kuopio University Hospital - NICU
Oulu	Oulu University Hospital
Tampere	Tampere University Hospital
Turku	Turku University Hospital

Germany

Berlin	Charite Campus Mitte
Berlin	Evangelisches Waldkrankenhaus Spandau
Greifswald	University Children's Hospital NICU

Ireland

Cork	Cork University Maternity Hospital
Drogheda, County Louth	Our Lady of Lourdes Hospital
Dublin	Coombe Women's Hospital
Dublin	National Maternity Hospital
Dublin	Rotunda Hospital
Galway	University College Hospital Galway
Sligo	Sligo General Hospital
Waterford	Waterford Regional Hospital

Italy

Acquaviva delle Fonti (BA)	NICU - Ente Ecclesiastico - F. Miulli
Bergamo	Ospedali Riuniti Di Bergamo
Bologna	Neonatologia S. Orsola
Bologna	Ospedale Maggiore - Bologna
Bolzano	Ospedale di Bolzano
Brescia	Neonatologia, Spedali Civili - Brescia

CENTERS INCLUDED IN THE 2007 ANNUAL REPORT

Italy

Campobasso	NICU - Ospedale Cardarelli
Camposampiero	Patologia Neonatale - Camposampiero
Como	NICU - Ospedale S. Anna - Como
Cremona	NICU - Istituti Ospitalieri di Cremona
Cuneo	NICU - Azienda Ospedaliera St. Croce e Carle
Ferrara	Unita di Terapia Intensiva Neonatale
Florence	Careggi University Hospital - Neonatology Unit
Foggia	NICU - Ospedali Riuniti - Foggia
Lecce	Azienda Ospedaliera Cardinale Panico
Lecco	Ospedale Di Lecco
Mantua	NICU - Carlo Poma Hospital
Messina	NICU - A.O.U. G. Martino Messina
Milan	Macedonio Melloni Maternity Hospital
Milan	Ospedale Maggiore Policlinico, Mangiagalli Regina
Milan	Ospedale Niguarda Ca Granda
Milan	San Raffaele Hospital - Milan
Milan	Ospedale Vittore Buzzi
Modena	Neonatologia - A.O. Policlinico di Modena
Monza	San Gerardo Hospital
Naples	NICU - Ospedale Evangelico Villa Betania
Naples	Terapia Intensiva Neonatale AOU Federico II
Novara	Patologia Neonatale - A.O. Maggiore Della Carita
Padua	NICU - Pediatric Department, University of Padua
Parma	Neonatology & NICU - University Hospital
Pavia	U.O. Patologia Neonatale e TIN
Rimini	Ospedale Infermi Di Rimini U.O. TIN
Roma	Policlinico Umberto I
Rome	Ospedale S. Giovanni Calibita Fatebenefratelli
Torino	SCDU Neonatologia-ASO OIRM S.Anna Univ.Torino
Trento	Neonatologia Trento/Ospedale S.Chiera
Treviso	Patologia Neonatale - Ca Foncello Hospital,Treviso
Trieste	IRCCS Burlo Garfolo
Udine	S.O.C. Neonatologia
Varese	NICU - Azienda Ospedaliera Varese
Verona	Policlinico G. B. Rossi

Kuwait

Salmiya	Farwaniya Hospital, Neonatal Unit
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Malaysia

Kuala Lumpur	University Kebangsaan Malaysia
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Portugal

Lisbon	Fernando Fonseca Hospital
Lisbon	Hospital de Santa Maria
Lisbon	Maternidade Dr. Alfredo Da Costa
Porto	Hospital de S. Joao

Saudi Arabia

Dhahran	Neonatology - Saudi Aramco
Riyadh	King Faisal Specialist Hospital & Research Centre

Singapore

Singapore	K.K. Women's & Children's Hospital
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South Africa

Alberton	Clinton Hospital
Bloemfontein	Bloemfontein MediClinic
Bryanston	Sandton MediClinic
Cape Town	Christiaan Barnard Memorial Hospital
Cape Town	Kingsbury Hospital
Durban	St. Augustines Hospital
East London	Life Health Care St. Dominic's
Elarduspark	Kloof MediClinic
Johannesburg	Park Lane Clinic
Kempton Park	Arwyp Medical Centre

CENTERS INCLUDED IN THE 2007 ANNUAL REPORT

South Africa

Kimberley
Krugersdorp
Mayfair West
N1 City
Panorama
Plumstead
Pretoria
Pretoria
Pretoria
Randburg
Richards Bay
Rivonia
Rustenburg
Stellenbosch
Vereeniging
Welkom

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

Spain

Barcelona
Barcelona
Bilbao
Madrid
Madrid
Oviedo
Salamanca
Sevilla
Tarragona

Hospital Clinic (sede Maternitat)
Hospital Sant Joan de Deu
Hospital de Basurto
Hospital Clinico San Carlos
Hospital Universitario La Paz
Hospital Universitario Central de Asturias
Hospital Universitario de Salamanca, Pediatria
Hospitales Universitarios Virgen del Rocio
Hospital Universitari Joan XXIII de Tarragona

Canary Islands

Las Palmas
Santa Cruz de Tenerife

HUMIC de Canarias
Hospital Universitario de Canarias

Switzerland

Zurich

University Hospital Zurich

Turkey

Ankara
Istanbul

Gazi University Hospital
Cerrahpasa Medical Faculty, Neonatology Unit

United Arab Emirates

Abu Dhabi
Dubai

Al Corniche Hospital
Al Wasl Hospital

United Kingdom

Barnstaple
Bristol
Bristol
Cardiff
Exeter
Liverpool
London
Newport
Oxford
Plymouth
Swansea, Wales
Torquay
Truro
Wishaw, Scotland

North Devon District Hospital
Southmead Hospital
St. Michaels Hospital
University Hospital of Wales
Royal Devon & Exeter NHS Foundation Trust
Liverpool Women's Hospital
St. Mary's Hospital-Imperial College NHS Trust
Royal Gwent Hospital
John Radcliffe Hospital
Derriford Hospital
Singleton Hospital Neonatal Unit, Swansea
Torbay Hospital (South Devon Healthcare NHS Trust)
Royal Cornwall Hospitals NHS Trust
Wishaw General Hospital

Northern Ireland

Antrim
Belfast
Belfast
Craigavon
Londonderry

Antrim Area Hospital
Royal Maternity Service
Ulster Hospital, Belfast
Craigavon Area Hospital
Altnagelvein Area Hospital

CENTERS INCLUDED IN THE 2007 ANNUAL REPORT

United States

Alabama

Birmingham	Brookwood Medical Center
Huntsville	Huntsville Hospital
Mobile	USA Children's & Women's Hospital
Montgomery	Baptist Medical Center

Alaska

Anchorage	Children's at Providence & AK Regional Hospital
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Arizona

Glendale	Banner Thunderbird Medical Center
Mesa	Banner Children's @ Banner Desert Medical Center
Phoenix	Phoenix Children's Hospital
Phoenix	St. Joseph's Hospital & Medical Center
Scottsdale	Scottsdale Healthcare - Quality
Tucson	University of Arizona Health Sciences Center

Arkansas

Little Rock	Arkansas Children's Hospital
Springdale	Northwest Medical Center of Washington County

California

Anaheim	Anaheim Memorial Medical Center
Anaheim	Kaiser Foundation-Orange County
Bakersfield	Bakersfield Memorial Hospital
Baldwin Park	Kaiser Permanente-Baldwin Park
Bellflower	Kaiser Foundation-Bellflower
Berkeley	Alta Bates Summit Medical Center
Burbank	Providence St. Joseph Medical Center
Carmichael	Mercy San Juan Medical Center
Chula Vista	Sharp Chula Vista Medical Center
Colton	Arrowhead Regional Medical Center
El Centro	El Centro Regional Medical Center
Encinitas	Rady Children's San Diego @ Scripps Encinitas
Escondido	Palomar Medical Center NICU
Fairfield	Northbay Medical Center
Fontana	Kaiser Foundation-Fontana
Fountain Valley	Fountain Valley Regional Hospital & Medical Center
Fremont	LPCH Special Care Nursery at Washington Hospital
Fresno	CHCC - St. Agnes Neonatal Unit in Fresno
Fresno	Community Regional Medical Center
Fullerton	St. Jude Medical Center
Glendale	Glendale Adventist Medical Center-NICU
Glendale	Glendale Memorial Hospital & Health Center
Greenbrae	Marin General Hospital
Harbor City	Kaiser Foundation-South Bay
Inglewood	Centinela Hospital Medical Center
La Mesa	Grossmont Hospital Women's Health Center
Laguna Hills	Saddleback Memorial Medical Center
Lancaster	Antelope Valley Hospital
Loma Linda	Loma Linda University Children's
Long Beach	Miller Children's Hospital
Long Beach	St. Mary Medical Center
Los Angeles	California Hospital Medical Center
Los Angeles	Cedars-Sinai Medical Center
Los Angeles	Children's Hospital Los Angeles
Los Angeles	Good Samaritan Hospital
Los Angeles	Hollywood Presbyterian Medical Center
Los Angeles	Kaiser Foundation-Los Angeles
Los Angeles	Kaiser Foundation-West Los Angeles
Los Angeles	LAC+USC Women's & Children's Hospital
Los Angeles	Mattel Children's Hospital at UCLA, NICU
Los Angeles	White Memorial Medical Center
Lynwood	St. Francis Medical Center - Lynwood

CENTERS INCLUDED IN THE 2007 ANNUAL REPORT

California

Madera	Children's Hospital Central California
Mission Viejo	CHOC at Mission
Modesto	Doctor's Medical Center
Modesto	Memorial Medical Center - Modesto
Monterey Park	Garfield Medical Center
Mountain View	El Camino Hospital
Newport Beach	Hoag Memorial Hospital Presbyterian
Northridge	Northridge Hospital
Oakland	Children's Hospital & Research Center at Oakland
Oceanside	Tri-City Medical Center
Orange	Children's Hospital of Orange County
Orange	UC Irvine Medical Center
Oxnard	St. John's Regional Medical Center
Palm Springs	Desert Regional Medical Center
Palo Alto	LPCH-Stanford University
Panorama City	Kaiser Foundation-Panorama City
Pasadena	Huntington Memorial Hospital
Pomona	Pomona Valley Hospital Medical Center
Redding	Mercy Medical Center
Redlands	Redlands Community Hospital
Redwood City	LPCH Special Care Nursery at Sequoia Hospital
Riverside	Kaiser Foundation-Riverside Medical Center
Riverside	Parkview Community Hospital Medical Center
Riverside	Riverside Community Hospital
Sacramento	Methodist Hospital of Sacramento
Sacramento	Sutter Medical Center Sacramento
Sacramento	UCDMC, Sacramento
Salinas	Natividad Medical Center
Salinas	Salinas Valley Memorial Hospital
San Bernardino	Community Hospital of San Bernardino
San Bernardino	St. Bernardine Medical Center
San Diego	Children's Hospital San Diego at Scripps La Jolla
San Diego	Kaiser Foundation-San Diego
San Diego	Naval Medical Center-San Diego
San Diego	Rady Children's Hospital-San Diego
San Diego	Scripps Mercy Hospital
San Diego	Sharp Mary Birch Hospital for Women
San Diego	UCSD Medical Center
San Francisco	CA Pacific Medical Center
San Francisco	San Francisco General Hospital
San Francisco	UCSF Medical Center
San Gabriel	San Gabriel Valley Medical Center -AHMC
San Jose	Good Samaritan HCA
San Jose	O'Connor Hospital - San Jose
San Jose	Regional Medical Center of San Jose
San Jose	Santa Clara Valley Medical Center
San Luis Obispo	Sierra Vista Regional Medical Center
Santa Ana	Western Medical Center
Santa Barbara	Cottage Health System, Santa Barbara
Santa Cruz	Dominican Hospital
Santa Monica	Santa Monica UCLA NICU
Santa Rosa	Santa Rosa Memorial Hospital
Santa Rosa	Sutter Medical Center of Santa Rosa
Stockton	Dameron Hospital Association (DHA)
Stockton	San Joaquin General Hospital
Stockton	St. Joseph's Medical Center
Sylmar	Olive View - UCLA Medical Center
Tarzana	Encino Tarzana Regional Medical Center
Thousand Oaks	Los Robles Regional Medical Center
Torrance	Harbor UCLA Medical Center
Torrance	Little Company of Mary Hospital
Torrance	Torrance Memorial Medical Center
Upland	San Antonio Community Hospital
Van Nuys	Valley Presbyterian Hospital
Ventura	Community Memorial Hospital of Ventura
Ventura	Ventura County Medical Center

CENTERS INCLUDED IN THE 2007 ANNUAL REPORT

California

Visalia	Kaweah Delta Health Care District
W. Covina	Citrus Valley Medical Center
Walnut Creek	John Muir Medical Center
Watsonville	Watsonville Community Hospital
Whittier	Presbyterian Intercommunity Hospital
Woodland Hills	Kaiser Foundation-Woodland Hills

Colorado

Aurora	Children's Hospital, The
Aurora	UCHSC
Denver	Exempla St. Joseph Hospital
Denver	Presbyterian-St. Luke's Medical Center
Denver	Rose Medical Center
Englewood	Swedish Medical Center
Fort Collins	Poudre Valley Health System
Grand Junction	St. Mary's Hospital & Medical Center
Lafayette	Exempla Good Samaritan Medical Center

Connecticut

Danbury	Danbury Hospital
Farmington	University of Connecticut Health Center
Hartford	Connecticut Children's Medical Center
Hartford	St. Francis Hospital
New Haven	Yale-New Haven Children's Hospital
Stamford	Stamford Hospital

Delaware

Newark	Christiana Care Health Services
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District of Columbia

Washington	Washington Hospital Center
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Florida

Boca Raton	West Boca Medical Center
Brandon	Brandon Regional Hospital
Fort Lauderdale	Broward General Medical Center
Ft. Myers	Children's Hospital of Southwest Florida - Lee Memorial
Hollywood	Joe DiMaggio Children's Hospital
Margate	Northwest Medical Center
Miami	Baptist Children's Hospital
Miami	Miami Children's Hospital
Miami	University of Miami - Jackson Memorial Hospital
Orlando	Florida Children's Hospital
Pensacola	Sacred Heart Health System
Plantation	Sheridan Children's/Plantation Hospital
Sarasota	All Children's at Sarasota Memorial
St. Petersburg	West Coast Neonatology, Inc. @ ACH
Tallahassee	Tallahassee Memorial Hospital
Tampa	St. Joseph's Children's Hospital of Tampa
Tampa	Tampa General Hospital
Tampa	Women's Center at UCH, The
West Palm Beach	St. Mary's Hospital

Georgia

Athens	Athens Regional Medical Center
Atlanta	Emory Crawford Long Hospital
Atlanta	Grady Memorial Hospital
Atlanta	Northside Hospital
Atlanta	Piedmont Hospital
Augusta	Medical College of Georgia
Austell	Wellstar Cobb Hospital
Columbus	The Medical Center at Columbus Regional
Conyers	Rockdale Medical Center
Gainesville	Northeast Georgia Medical Center
Lawrenceville	Gwinnett Health System

CENTERS INCLUDED IN THE 2007 ANNUAL REPORT

Georgia

Marietta	Wellstar Kennestone Hospital
Riverdale	Southern Regional Medical Center
Savannah	MHUMC - Savannah
Stockbridge	Henry Medical Center

Idaho

Boise	St. Luke's Regional Medical Center
Pocatello	Portneuf Medical Center

Illinois

Aurora	Rush-Copley Medical Center
Chicago	Illinois Masonic Medical Center
Chicago	John H. Stroger, Jr. Hospital of Cook County
Chicago	Mercy Hospital & Medical Center
Chicago	Mt. Sinai Hospital Medical Center
Chicago	Northwestern Memorial
Chicago	University of Chicago
Chicago	University of Illinois at Chicago
Downers Grove	Advocate Good Samaritan Hospital
Evanston	Evanston Hospital
Hinsdale	Adventist Hinsdale Hospital
Hoffman Estates	St. Alexius Medical Center
Maywood	RMCH at Loyola University Medical Center
Naperville	Edward Hospital & Health Services
Oak Lawn	Christ Hospital & Medical Center
Park Ridge	Advocate Lutheran General Hospital
Peoria	CHOI at OSF St. Francis Medical Center
Rockford	Rockford Memorial Hospital
Springfield	St. John's Hospital
Urbana	Carle Foundation Hospital
Winfield	Central Dupage Hospital

Indiana

Carmel	Clarian North Medical Center
Evansville	St. Mary's Medical Center
Fort Wayne	Dupont Hospital
Fort Wayne	Lutheran Hospital of Indiana
Fort Wayne	Parkview Hospital
Gary	Methodist Hospitals, Inc.
Indianapolis	Methodist Hospital of Indiana
Indianapolis	St. Vincent Women's Hospital
Lafayette	St. Elizabeth Regional Health
Muncie	Ball Memorial Hospital
Newburgh	Women's Hospital
South Bend	Memorial Hospital

Iowa

Cedar Rapids	St. Luke's Hospital
Davenport	Genesis Medical Center
Des Moines	Blank Children's Hospital
Des Moines	Mercy Medical Center
Iowa City	University of Iowa Children's Hospital
Sioux City	St. Luke's Regional Medical Center

Kansas

Kansas City	University of Kansas Hospital Authority
Overland Park	Overland Park Regional Medical Staff
Shawnee Mission	Shawnee Mission Medical Center
Wichita	Via Christi-St. Joseph Campus
Wichita	Wesley Medical Center

Kentucky

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

CENTERS INCLUDED IN THE 2007 ANNUAL REPORT

Kentucky

Louisville Norton Suburban Hospital
Louisville University of Louisville Hospital

Louisiana

Alexandria Christus St. Frances Cabrini Hospital
Alexandria Rapides Women's & Children's Hospital
Baton Rouge Earl K. Long Medical Center
Baton Rouge Woman's Hospital
Gretna Meadowcrest Hospital - NICU
Hammond North Oaks Medical Center
Lafayette Lafayette General Medical Center
Lake Charles Women & Children's Hospital, Lake Charles
Marrero West Jefferson Medical Center
Metairie East Jefferson General Hospital
New Orleans Medical Center of Louisiana - New Orleans
New Orleans Ochsner Clinic Foundation
New Orleans Tulane Medical Center/Lakeside Hospital
Shreveport Christus Schumpert Sutton Children's
Shreveport Willis-Knighton South

Maine

Bangor Eastern Maine Medical Center
Portland Barbara Bush Children's at Maine Medical Center

Maryland

Annapolis Anne Arundel Medical Center
Baltimore Franklin Square Hospital Center
Baltimore Greater Baltimore Medical Center
Baltimore Sinai Hospital of Baltimore
Baltimore St. Agnes Hospital
Baltimore University of Maryland Division of Neonatology
Bethesda National Naval Medical Center
Columbia Howard County General Hospital
Frederick Frederick Memorial Hospital
Rockville Shady Grove Adventist Hospital
Silver Spring Holy Cross Hospital
Towson St. Joseph Medical Center

Massachusetts

Boston Beth Israel Deaconess Medical Center
Boston Boston Medical Center
Boston Brigham and Women's Hospital
Boston Caritas St. Elizabeth's Medical Center
Boston Massachusetts General Hospital for Children
Boston Tufts Medical Center
South Weymouth South Shore Hospital
Springfield Baystate Medical Center
Worcester UMass Memorial Healthcare

Michigan

Ann Arbor St. Joseph Mercy Hospital
Ann Arbor University of Michigan-Holden NICU
Dearborn Oakwood Hospital & Medical Center
Detroit Henry Ford Hospital
Detroit St. John Hospital & Medical Center
Flint Hurley Medical Center
Grand Rapids DeVos Children's/Spectrum Health
Grand Rapids St. Mary's Mercy Medical Center
Kalamazoo Children's Hospital at Bronson
Lansing Sparrow Hospital
Marquette Marquette General Health System - NICU
Pontiac St. Joseph Mercy Oakland
Saginaw Covenant Healthcare
Southfield Providence Hospital & Medical Center
Traverse City Munson Medical Center

CENTERS INCLUDED IN THE 2007 ANNUAL REPORT

Minnesota

Duluth	St. Mary's Medical Center
Minneapolis	Children's Hospitals & Clinics
Minneapolis	Hennepin County Medical Center
Minneapolis	University of Minnesota Children's Hospital, Fairview
Robbinsdale	North Memorial Medical Center
Rochester	Mayo Foundation
St. Cloud	St. Cloud Hospital
St. Paul	Children's Hospitals and Clinics

Mississippi

Gulfport	Memorial Hospital at Gulfport
Hattiesburg	Forrest General Hospital
Hattiesburg	Wesley Medical Center
Jackson	Central Mississippi Medical Center
Jackson	Mississippi Baptist Health Systems
Jackson	River Oaks Health System
Jackson	St. Dominic - Jackson Memorial Hospital
Meridian	Jeff Anderson Regional Medical Center
Meridian	Rush Foundation Hospital
Tupelo	North Mississippi Medical Center

Missouri

Cape Girardeau	Southeast Missouri Hospital
Cape Girardeau	St. Francis Medical Center
Columbia	Columbia Regional Hospital
Joplin	Freeman Hospital & Health System
Kansas City	Children's Mercy Hospital
Kansas City	St. Luke's Hospital
Kansas City	Truman Medical Center
St. Louis	Cardinal Glennon Children's Hospital
St. Louis	St. John's Mercy Medical Center
St. Louis	St. Louis Children's Hospital

Montana

Billings	Billings Clinic
Billings	St. Vincent Hospital & Health Center
Great Falls	Benefis Healthcare
Missoula	Community Medical Center

Nebraska

Lincoln	St. Elizabeth Regional Medical Center
Omaha	Alegent Health Bergen Mercy Medical Center
Omaha	Children's Hospital Omaha
Omaha	Creighton University Medical Center
Omaha	Nebraska Medical Center

Nevada

Las Vegas	Sunrise Hospital & Medical Center
Las Vegas	University Medical Center of Southern Nevada

New Hampshire

Lebanon	Dartmouth-Hitchcock Medical Center
Manchester	Elliot Hospital

New Jersey

Camden	Children's at Cooper U. Medical Center
Camden	Our Lady of Lourdes Medical Center
Hackensack	Hackensack University Medical Center
Jersey City	Jersey City Medical Center
Livingston	St. Barnabas Medical Center
Long Branch	Monmouth Medical Center
Morristown	Morristown Memorial Hospital

CENTERS INCLUDED IN THE 2007 ANNUAL REPORT

New Jersey

Neptune	Jersey Shore University Medical Center
New Brunswick	Robert Wood Johnson University Hospital
New Brunswick	St. Peter's Medical Center
Newark	Children's Hospital of New Jersey at NBIMC
Newark	University Hospital UMDNJ
Paterson	St. Joseph Hospital & Medical Center
Trenton	Capital Health System @ Mercer
Voorhees	Virtua Hospital Systems

New Mexico

Albuquerque	Children's Medical Center at Presbyterian Hospital
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New York

Albany	Albany Medical Center
Albany	St. Peter's Hospital
Bronx	Weiler Hospital-Montefiore
Brooklyn	Brookdale Hospital Medical Center
Brooklyn	Brooklyn Hospital Center, The
Brooklyn	Kings County Hospital Center
Brooklyn	Maimonides Medical Center
Brooklyn	University Hospital of Brooklyn
Brooklyn	Woodhull Medical Center
Elmira	Arnot Ogden Medical Center
Mineola	Winthrop University Hospital
New York	Bellevue Hospital
New York	Columbia University Medical Center
New York	Lenox Hill Hospital
New York	St. Vincent Hospital & Medical Center-Manhattan
New York	Tisch Hospital-NYU Medical Center
New York	Weill Cornell Medical Center
Poughkeepsie	Vassar Brothers Hospital
Rochester	Golisano Children's Hospital at Strong
Staten Island	Richmond University Medical Center
Staten Island	Staten Island University Hospital
Syracuse	St. Joseph's Health Center

North Carolina

Asheville	Mission Hospitals
Chapel Hill	North Carolina Children's Hospital
Charlotte	Carolinas Medical Center
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
Winston-Salem	Forsyth Memorial Hospital

North Dakota

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

Ohio

Akron	Akron Children's Hospital
Akron	Summa Health System
Canton	Aultman Hospital
Cincinnati	Children's Hospital Medical Center Cincinnati
Cincinnati	Good Samaritan Hospital
Cincinnati	University Hospital NICU
Cleveland	Cleveland Clinic Foundation, The

CENTERS INCLUDED IN THE 2007 ANNUAL REPORT

Ohio

Cleveland	Fairview Hospital
Cleveland	Rainbow Babies & Children's Hospital
Columbus	Mt. Carmel Health Systems
Columbus	Nationwide Children's Hospital
Columbus	Ohio State University Medical Center
Dayton	Children's Medical Center
Dayton	Miami Valley Hospital
Lima	St. Rita's Medical Center
Mayfield Heights	Meridia Hillcrest Hospital
Toledo	St. Vincent Mercy Children's Hospital
Toledo	Toledo Children's Hospital
Youngstown	Forum Health -Tod Children's
Youngstown	St. Elizabeth Hospital Center

Oklahoma

Oklahoma City	Mercy Health Center
Oklahoma City	O.U. Health Sciences Center
Tulsa	OSU Medical Center
Tulsa	Peggy V. Helmerich Women's Center
Tulsa	St. Francis Hospital
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

Abington	Abington Memorial Hospital
Allentown	Allentown's Neonatal Intensive Care
Allentown	Lehigh Valley Hospital
Bethlehem	St. Luke's Hospital
Bryn Mawr	Bryn Mawr Hospital
Danville	Geisinger Medical Center
DuBois	DuBois Regional Medical Center NICU
Erie	Hamot Medical Center
Erie	St. Vincent Health Center
Hershey	Penn State Children's Hospital
Johnstown	Conemaugh Memorial Medical Center
Lancaster	Lancaster General Hospital
Meadowbrook	Holy Redeemer Hospital & Medical Center
Philadelphia	Albert Einstein Medical Center
Philadelphia	Children's Hospital of Philadelphia Newborn Center
Philadelphia	Hahnemann University Hospital
Philadelphia	Hospital of University of Pennsylvania
Philadelphia	Pennsylvania Hospital
Philadelphia	Temple University Hospital
Philadelphia	Thomas Jefferson University Hospital
Pittsburgh	Magee-Women's Hospital
Pittsburgh	Western Pennsylvania Hospital
Reading	Reading Hospital & Medical Center
Scranton	Moses Taylor Hospital
Upland	Crozer-Chester Medical Center
West Chester	CHOP Newborn Center at Chester County Hospital
Wynnewood	Lankenau Hospital
York	York Hospital

Puerto Rico

San Juan	University of Puerto Rico Hospital NICU
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CENTERS INCLUDED IN THE 2007 ANNUAL REPORT

South Carolina

Charleston	Medical University of South Carolina
Columbia	Palmetto Health Richland
Florence	McLeod Regional Medical Center
Greenville	Children's Hospital of Greenville
Spartanburg	Spartanburg Regional Healthcare System

South Dakota

Rapid City	Rapid City Regional Hospital
Sioux Falls	Avera McKennan
Sioux Falls	Boekelheide NICU at Sanford Health

Tennessee

Chattanooga	Parkridge East Hospital
Chattanooga	T.C. Thompson Children's Hospital
Columbia	Maury Regional Hospital
Jackson	Jackson-Madison County General Hospital
Johnson City	Johnson City Medical Center
Kingsport	Neonatology Associates - Wellmont Holston Medical Center
Knoxville	East Tennessee Children's Hospital
Knoxville	St. Mary's Health System Inc.
Knoxville	University of Tennessee Medical Center at Knoxville
Memphis	Baptist Memorial Hospital for Women
Memphis	Le Bonheur Children's Medical Center
Memphis	Regional Medical Center at Memphis
Nashville	Centennial Medical Center
Nashville	Monroe Carell Jr. Children's Hospital Vanderbilt

Texas

Amarillo	Baptist St. Anthony's Health System
Amarillo	Texas Tech University Health Science Center
Arlington	Arlington Memorial Hospital
Arlington	Medical Center of Arlington
Austin	North Austin Medical Center
Austin	St. David's Medical Center
Corpus Christi	Corpus Christi Medical Center
Corpus Christi	Driscoll Children's Hospital
Dallas	Baylor University Medical Center
Dallas	Medical City - Dallas
Dallas	Methodist Dallas Medical Center
Dallas	Presbyterian Hospital of Dallas
Fort Worth	Baylor All Saints Medical Center
Fort Worth	Cook Children's Medical Center
Fort Worth	Harris Methodist Fort Worth Hospital
Fort Worth	John Peter Smith Hospital
Houston	Children's Memorial Hermann Hospital
Houston	Memorial Hermann Memorial City Medical Center
Houston	Memorial Hermann Southwest
Houston	Texas Children's Hospital/Baylor College of Medicine
Houston	Woman's Hospital of Texas, The
Longview	Good Shepherd Medical Center
Plano	Medical Center of Plano
Plano	Presbyterian Hospital of Plano
San Antonio	Baptist Healthcare System
San Antonio	Christus Santa Rosa Healthcare
San Antonio	Methodist Children's Hospital
San Antonio	Metropolitan Methodist Hospital
San Antonio	University Hospital San Antonio
Temple	Scott & White Hospital

Utah

Ogden	McKay-Dee Hospital Center
Provo	Utah Valley Regional Medical Center
Salt Lake City	LDS Hospital
Salt Lake City	University of Utah Health Sciences Center

CENTERS INCLUDED IN THE 2007 ANNUAL REPORT

Utah

St. George Dixie Regional Medical Center

Vermont

Burlington Vermont Children's at Fletcher-Allen Health Care

Virginia

Fairfax Inova Fair Oaks Hospital
Falls Church Inova Fairfax Hospital for Children
Lynchburg Centra Health - Virginia Baptist Hospital
Portsmouth Naval Medical Center Portsmouth
Richmond Bon Secours Richmond Health System
Richmond Henrico Doctor's Hospital
Winchester Winchester Medical Center

Washington

Renton Valley Med. Center/Pediatrix Medical Group of Washington
Richland Kadlec Medical Center NICU
Seattle Swedish Medical Center
Seattle University of Washington Medical Center
Spokane Deaconess Medical Center
Spokane Sacred Heart Medical Center
Vancouver Legacy Salmon Creek Hospital
Vancouver Southwest Washington Medical Center
Yakima Yakima Valley Memorial Hospital

West Virginia

Charleston Charleston Area Medical Center
Huntington Cabell Huntington Hospital, Inc.
Morgantown West Virginia University School of Medicine

Wisconsin

Appleton Affinity NICU - St. Elizabeth Hospital
Green Bay Aurora Baycare Medical Center
Green Bay St. Vincent Hospital
LaCrosse Gundersen Lutheran Medical Center
Madison Meriter Hospital
Madison St. Mary's Hospital Medical Center
Marshfield St. Joseph Hospital-Marshfield Clinic
Milwaukee Aurora Sinai Medical Center
Milwaukee Children's Hospital of Wisconsin
Milwaukee Columbia St. Mary's Hospital
Milwaukee Wheaton Franciscan Healthcare - St. Joseph
Neenah Children's Hospital of Wisconsin - Fox Valley
Racine Wheaton Franciscan Healthcare - All Saints, Inc.
Waukesha Waukesha Memorial Hospital
Wausau Aspirus Wausau Hospital
West Allis Aurora Women's Pavilion

Section 1

Key Performance Measures Infants 501-1500 Grams

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

Section 1

Key Performance Measures

Infants 501-1500 Grams

For the Period 2005 to 2007 and Birth Year 2007

Section 1 applies to infants with birth weights between 501 and 1500 grams and provides unadjusted and risk-adjusted summaries for important morbidity, length of stay and mortality measures. Table 1.1 shows the number of infants with birth weights between 501 and 1500 grams reported by your center and by the Network as a whole from 1990 to 2007. Tables 1.2 and 1.3 show observed (unadjusted) values for key performance measures by year and overall for the three-year period 2005-2007. Table 1.4 and Figures 1.1 to 1.15 show risk-adjusted outcomes for the three-year period 2005 to 2007. Table 1.5 and Figures 1.16 to 1.30 show risk-adjusted outcomes for infants born in 2007.

Table 1.1

Number of Infants in the VLBW Database, 1990 to 2007

Number of infants 501 to 1500 grams included in the Database for each year, 1990 to 2007, at your center and in all Network hospitals. All infants within the birth weight range 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

Observed Rates for Key Outcomes Infants 501-1500 Grams, 2005 to 2007

Table 1.2 reports the observed (unadjusted) values for outcomes and length of stay for all infants with birth weights between 501 and 1500 grams at your center who were born during the three-year period 2005 to 2007. The table also includes the Network proportion and Network first and third quartile values (25th percentile, 75th percentile) for all 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. Table 1.2 does not include risk adjustment measures. Risk-adjusted values for these outcomes are shown in Table 1.4 and Figures 1.1 to 1.15.

The 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.
- Periventricular Leukomalacia (PVL). 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 (CLD). 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. 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

- 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 36 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.
 - Intraventricular Hemorrhage, grades 1 to 4 (IVH). This measure is applicable to all infants who received a cranial ultrasound.
 - Severe IVH, grades 3 and 4. This measure is applicable to all infants who received a cranial ultrasound.
 - Retinopathy of Prematurity, stages 1 to 4 (ROP). This measure is applicable to all infants who received an eye exam.
 - Severe ROP, stages 3 and 4. This measure is applicable to all infants who received an eye exam.
 - Late Bacterial Infection after Day 3 of life. This measure is applicable to infants 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.
 - Coagulase Negative Staph Infection after Day 3 of life. This measure is applicable to infants 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.
 - 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 either in your center, in the

transferring center if outborn, or in another 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 either in your center, in the transferring center if outborn, or in another center if readmitted to your hospital following transfer.
- Death at any time prior to discharge home or first birthday. This measure is applicable to all infants for whom survival status is known. Mortality is not reported for some hospitals with missing data.

For each of the three years, Table 1.2 includes columns showing the number of infants at your center for which the outcomes are applicable (N) and the observed proportion of infants with the outcome at your center (Ctr Value). If your center did not report data for 2005 or 2006, the columns for those years will be blank. 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 in the Network with the outcome (Network Value), and the first and third Network quartile values based on all Network hospitals (25th percentile, 75th percentile). Twenty-five percent of the reporting hospitals had an observed proportion for the outcome which is equal to or less than the value in the column labeled 25th percentile, and 25% of hospitals had an observed proportion equal to or greater than the value in the column labeled 75th percentile. If your center value for the three-year period is between the 25th and 75th percentile values, this means that your center observed value for the measure falls in the middle 50% of Network hospitals.

Table 1.3
Procedures and Length of Stay
Infants 501-1500 Grams, 2005 to 2007

For infants with birth weights between 501 and 1500 grams, Table 1.3 reports the observed (unadjusted) values for procedures and length of stay at your center during the three-year period 2005 to 2007, as well as the overall Network value and first and third Network quartile values (25th percentile and 75th percentile) for the three-year period. If your center did not report data for 2005 or 2006, the columns for those years will be blank. Note that Table 1.3 does not include any risk-adjusted measures. Adjusted Total Hospital Stay for infants who survived is reported in Section 8.

Table 1.3 includes the same columns for procedures and length of stay as were described for outcomes in Table 1.2 above. The measures reported in Table 1.3 include the following:

- Antenatal Steroids administered for infants with birth weights between 501 and 1500 grams, restricted to those whose gestational age is between 24 weeks, 0 days and 33 weeks, 6 days.
- Antenatal Steroids administered for all infants with birth weights between 501 and 1500 grams.
- Eye Exam. This measure is applicable to all infants with birth weights between 501 and 1500 grams who did not die in the delivery room/initial resuscitation area.

- Cranial Ultrasound: This measure is applicable to all infants with birth weights between 501 and 1500 grams who did not die in the delivery room/initial resuscitation area.
- Surfactant after 2 Hours for Infants 501 to 1250 Grams: This measure is applicable to all infants with birth weights between 501 and 1250 grams who received surfactant.
- Surfactant after 2 Hours for Infants 501 to 1500 Grams: This measure is applicable to all infants with birth weights between 501 and 1500 grams who received surfactant.
- Initial Length of Stay (LOS) at your center (Center LOS): This measure applies to infants with birth weights between 501 and 1500 grams who were discharged home or transferred from your center or who were still hospitalized in your center as of first birthday.
- Total Hospital Stay: This measure applies to infants with birth weights between 501 and 1500 grams who survived until discharge home or first birthday, whichever was sooner, including 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.

Table 1.4
Risk-Adjusted Outcome Measures
Infants 501-1500 Grams, 2005 to 2007

Table 1.4 reports the risk-adjusted outcome measures for infants with birth weights between 501 to 1500 grams who were born during the three year period 2005 to 2007. The number of infants at your center for which 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 1.15. The outcome measures in the table are described in the text for Table 1.2 above.

The Standardized Morbidity or Mortality Ratios (SMRs) and confidence intervals have 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 by moving it closer to the Network mean value of all hospital 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. Shrunk 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 shrunk 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's gender and whether the infant was a singleton or multiple gestation. The United States 2001 and 2002 Natality Datasets were used for calculating the 10th percentile values.
- Major birth defect (Yes or No). For reported outcomes other than Mortality and Death or Morbidity, this dichotomous predictor is used. For Mortality and Death or Morbidity, the 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 gestation (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 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 were 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 the infants treated.

Table 1.4 also shows the difference (O-E) between the number of observed (O) and expected (E) cases 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 fewer cases were observed than expected for the outcome at your center, 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 more cases were observed than 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 the number of observed and expected cases was equal. As with the

SMRs, the O-E values have been corrected using shrinkage methods to provide an estimate of the true difference between the observed and expected values.

The control limits plotted in Figures 1.2 to 1.15 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 labeled 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) Infants 501-1500 Grams, 2005 to 2007

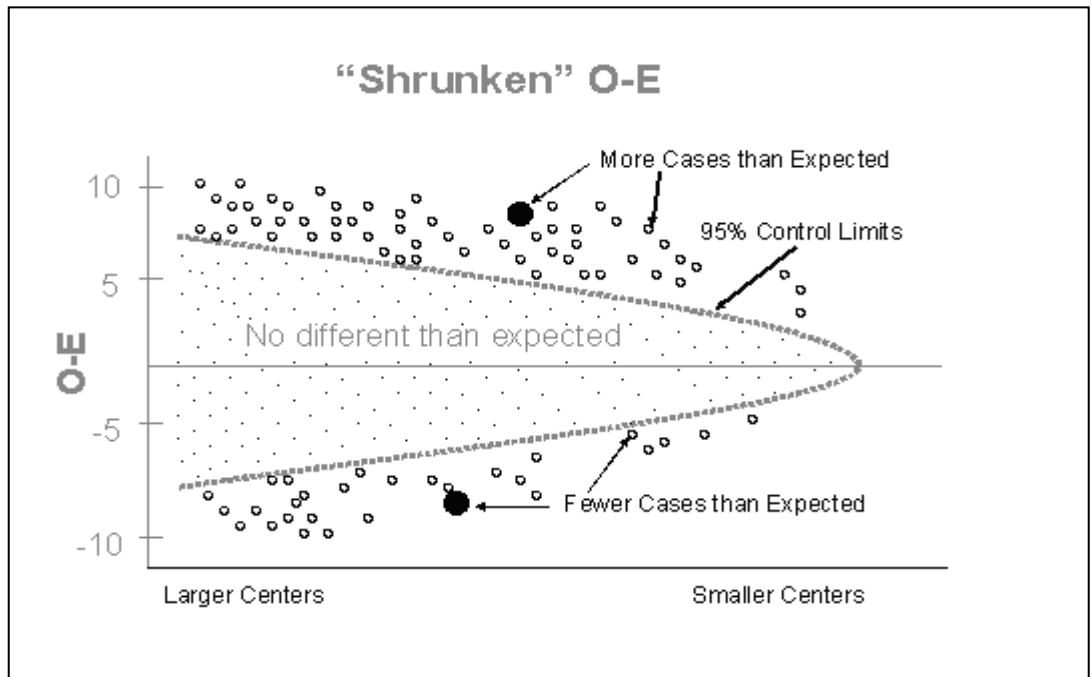
Figure 1.1 plots the values for the shrunken SMRs and their 95% confidence intervals for the three-year period 2005 to 2007, which are shown in Table 1.4 and described in the introduction to Table 1.4 above. Some of the outcome measure names in Table 1.4 have been abbreviated in the figures. These include Pneumothorax (PNTX), Severe IVH (SIVH), Severe ROP (SROP), Late Bacterial Infection (LBPATh), Coagulase Negative Staph (CNEG) and Nosocomial Bacterial Infection (NOSO).

Figures 1.2 to 1.15

Observed Minus Expected Values

Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Figures 1.2 to 1.15 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 by all network centers for infants with birth weights between 501 and 1500 grams who were born between 2005 and 2007. 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 and no large dot will be plotted. If you do not see a large dot in a figure for your center, see Table 1.4 for your center value.



In many of the figures the number of centers outside the control limits is considerably larger than five percent of all reporting centers. The 95% control limits in Figures 1.2 to 1.15 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
Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Figure 1.3
Observed Minus Expected Values for
Periventricular Leukomalacia
Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Figure 1.4
Observed Minus Expected Values for
Chronic Lung Disease
Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Figure 1.5
Observed Minus Expected Values for
Necrotizing Enterocolitis
Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Figure 1.6
Observed Minus Expected Values for
Intraventricular Hemorrhage
Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Figure 1.7
Observed Minus Expected Values for
Severe Intraventricular Hemorrhage
Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Figure 1.8
Observed Minus Expected Values for
Retinopathy of Prematurity
Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Figure 1.9
Observed Minus Expected Values for
Severe Retinopathy of Prematurity
Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Figure 1.10
Observed Minus Expected Values for
Late Bacterial Infection
Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Figure 1.11
Observed Minus Expected Values for
Coagulase Negative Staph Infection
Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Figure 1.12
Observed Minus Expected Values for
Nosocomial Infection
Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Figure 1.13
Observed Minus Expected Values for
Fungal Infection
Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Figure 1.14
Observed Minus Expected Values for
Mortality
Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Figure 1.15
Observed Minus Expected Values for
Death or Morbidity
Infants 501-1500 Grams, Shrunken Estimates for 2005 to 2007

Table 1.5
Risk-Adjusted Outcome Measures
Infants 501-1500 Grams Born in 2007

Table 1.5 shows the risk-adjusted outcome measures for infants with birth weights between 501 and 1500 grams who were born in 2007. Table 1.5 is similar to Table 1.4, except Table 1.5 only includes infants born in 2007. For a description of the table layout and statistics, please see the text for Table 1.4. Each of the measures in Table 1.5 is plotted in Figures 1.16 to 1.30.

Figure 1.16
Shrunken Standardized Morbidity and Mortality Ratios (SMR)
Infants 501-1500 Grams Born in 2007

Figure 1.16 is a plot of the values for the shrunken SMRs and their 95% confidence intervals for infants with birth weights between 501 and 1500 grams who were born in 2007. The measures in these figures and the chart format are described in the text for Table 1.4 in this section.

Figure 1.17 to 1.30
Observed Minus Expected Values
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Figures 1.17 to 1.30 are plots of the values for the shrunken O-E estimates and the 95% control limits for infants with birth weights between 501 and 1500 grams who were born 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 1.17
Observed Minus Expected Values for
Pneumothorax
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Figure 1.18
Observed Minus Expected Values for
Periventricular Leukomalacia
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Figure 1.19
Observed Minus Expected Values for
Chronic Lung Disease
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Figure 1.20
Observed Minus Expected Values for
Necrotizing Enterocolitis
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Figure 1.21
Observed Minus Expected Values for
Intraventricular Hemorrhage
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Figure 1.22
Observed Minus Expected Values for
Severe Intraventricular Hemorrhage
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Figure 1.23
Observed Minus Expected Values for
Retinopathy of Prematurity
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Figure 1.24
Observed Minus Expected Values for
Severe Retinopathy of Prematurity
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Figure 1.25
Observed Minus Expected Values for
Late Bacterial Infection
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Figure 1.26
Observed Minus Expected Values for
Coagulase Negative Staph Infection
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Figure 1.27
Observed Minus Expected Values for
Nosocomial Infection
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Figure 1.28
Observed Minus Expected Values for
Fungal Infection
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Figure 1.29
Observed Minus Expected Values for
Mortality
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Figure 1.30
Observed Minus Expected Values for
Death or Morbidity
Infants 501-1500 Grams, Shrunken Estimates for Birth Year 2007

Section 2

Characteristics, Interventions, and Outcomes by Birth Weight

Infants 501-1500 Grams Born in 2007

Section 2

Characteristics, Interventions, and Outcomes by Birth Weight

Infants 501-1500 Grams Born in 2007

The tables and figures in this section show the number of admissions and infant characteristics, interventions and outcomes for infants born in 2007 with birth weights between 501 and 1500 grams by birth weight category.

Table 2.1 shows the number of infants for whom the various measures in Section 2 are applicable, by birth weight category and overall (All, 501-750, 751-1000, 1001-1250, 1251-1500). **Tables 2.2 to 2.9** 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 network centers by these birth weight categories. By definition, at least 25% of the centers will have values at or below the first quartile and at least 25% of the centers will have values at or above the third quartile.

Table 2.1

Number of Infants for Categories of Measures by Birth Weight Infants 501-1500 Grams Born in 2007

For the categories of measures included in Section 2, the number of infants at your center with birth weights between 501 and 1500 grams who were born in 2007. Numbers are tabulated by 250-gram birth weight category and overall. For the CLD measures (All and Infants < 33 Weeks GA), the numbers are based on the algorithm described in the introduction to Table 1.2 in Section 1.

Table 2.2

Infant Characteristics by Birth Weight Infants 501-1500 Grams Born in 2007

Characteristics of infants by 250-gram birth weight category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and quartile values for all centers in the Network 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 infants with birth weights between 501 and 1500 grams (Total Infants, Table 2.1).

Table 2.3**Initial Resuscitation by Birth Weight
Infants 501-1500 Grams Born in 2007**

Initial resuscitation by 250-gram birth weight category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values are shown for each of the measures. The measures in this table are applicable to all infants with birth weights between 501 and 1500 grams (Total Infants, Table 2.1).

Table 2.4**Respiratory Outcomes and Interventions by Birth Weight
Infants 501-1500 Grams Born in 2007**

Respiratory outcomes and interventions by 250-gram birth weight category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values are shown for each of the measures. Other than the exceptions listed below, measures in this table are applicable to all infants in the birth weight range, except those infants who die in the delivery room/initial resuscitation areas.

The Early CPAP measure is restricted to infants who received 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 received Early CPAP and indicates whether the infant received ETT ventilation after first receiving CPAP. The Surfactant after 2 Hours measure is restricted to infants who received surfactant.

The Oxygen at 28 Days and Oxygen at 36 Weeks measures only apply 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 measures for CLD at 36 Weeks (CLD 36) and CLD at 36 Weeks for Infants with Gestational Age Less than 33 Weeks (CLD 36 < 33) are based on the algorithm for chronic lung disease described in the introduction to Table 1.2 in Section 1. The CLD measures only apply 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**Other Outcomes and Interventions by Birth Weight
Infants 501-1500 Grams Born in 2007**

Other outcomes and interventions by 250-gram birth weight category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values are shown for each of the measures.

The percent of infants with late infection measures is limited to infants hospitalized after Day 3 of life. For infants who received a Cranial Ultrasound, the Any IVH measure is the percent of infants who had grades 1 to 4 Periventricular-Intraventricular Hemorrhage

(PIH); Severe IVH reports the percent who had grades 3 or 4 PIH. Any ROP shows the percent of infants who had stage 1 to 4 Retinopathy of Prematurity among infants who had a retinal exam performed; Severe ROP shows the percent who had stage 3 or 4 ROP. Other measures reported in this table apply to all infants except those who died in the delivery room/initial resuscitation area.

Table 2.6

Surgery by Birth Weight

Infants 501-1500 Grams Born in 2007

Surgical procedures by 250-gram birth weight category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values are shown for each of the measures: PDA Ligation, NEC Surgery, ROP 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 infants in the birth weight range, except those who died in the delivery room/initial resuscitation area.

Table 2.7

Enteral Feeding

by Birth Weight and Discharge Status

Infants 501-1500 Grams Born in 2007

Enteral Feeding at Discharge (Home, Transfer, Died, All) by 250-gram birth weight category for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values 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.

Table 2.8

Average Weight in Grams by Birth Weight and Initial Disposition Status

Infants 501-1500 Grams Born in 2007

Average Weight in grams at Initial Disposition (Home, Transfer, Died, All) by 250-gram birth weight category for infants with birth weights between 501 and 1500 grams who were born in 2007. The values at your center and Network quartile values are shown. Infants still hospitalized as of first birthday are included in the "Home" category. These measures apply to all infants for whom Initial Disposition is known. Infants who died in the DR/initial resuscitation area are excluded.

Table 2.9**Median Time to First Dose of Surfactant by Birth Weight
Infants 501-1500 Grams Born in 2007**

Median Time to First Dose of Surfactant by 100-gram birth weight category for infants with birth weights between 501 and 1500 grams who were born in 2007. If the values are ordered from lowest to highest, the median is the middle value. The values at your center and Network quartile values are shown. These measures apply to all eligible infants who received surfactant.

Figures 2.1 to 2.28 show summary data for infants with birth weights between 501 and 1500 grams who were born in 2007 by 100-gram birth weight category. 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 quartile values (25th and the 75th percentile values) for all network 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
Infants 501-1500 Grams Born in 2007****Figure 2.2****C-Section by Birth Weight
Infants 501-1500 Grams Born in 2007**

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007.

Figure 2.3**Inborn Births by Birth Weight
Infants 501-1500 Grams Born in 2007**

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007.

Figure 2.4**Conventional Ventilation by Birth Weight
Infants 501-1500 Grams Born in 2007**

This measure applies to all infants with birth weights between 501 and 1500 grams 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
Infants 501-1500 Grams Born in 2007**

This measure applies to all infants with birth weights between 501 and 1500 grams 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
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams 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
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.8
Pneumothorax by Birth Weight
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams 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
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007.

Figure 2.10
First Dose of Surfactant after 2 Hours by Birth Weight
Infants 501-1500 Grams Born in 2007

This measure applies to infants with birth weights between 501 and 1500 grams who were born in 2007 and received surfactant.

Figure 2.11
Chronic Lung Disease by Birth Weight
Infants 501-1500 Grams Born in 2007

Chronic lung disease (CLD) at 36 weeks corrected gestational age for infants born in 2007. This measure applies to infants with birth weights between 501 and 1500 grams who are eligible, based on the algorithm described in the introduction to Section 1, Table 1.2.

Figure 2.12
Chronic Lung Disease for Infants < 33 Weeks GA by Birth Weight
Infants 501-1500 Grams Born in 2007

Chronic lung disease (CLD) at 36 weeks corrected gestational age for infants with birth weights between 501 and 1500 grams 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 2.13

Patent Ductus Arteriosus by Birth Weight

Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.14

Indomethacin by Birth Weight

Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.15

Early Bacterial Infection by Birth Weight

Infants 501-1500 Grams Born in 2007

Early Bacterial Infection on or before Day 3 of life. This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.16

Late Bacterial Infection by Birth Weight

Infants 501-1500 Grams Born in 2007

Late Bacterial Infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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 2.17

Coagulase Negative Staph Infection by Birth Weight

Infants 501-1500 Grams Born in 2007

Coagulase Negative Staph Infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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

Nosocomial Bacterial Infection by Birth Weight

Infants 501-1500 Grams Born in 2007

Late Bacterial and/or Coagulase Negative Staph Infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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

**Fungal Infection by Birth Weight
Infants 501-1500 Grams Born in 2007**

Fungal infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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

**Cranial Ultrasound Exam by Birth Weight
Infants 501-1500 Grams Born in 2007**

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 2.21

**Intraventricular Hemorrhage by Birth Weight
Infants 501-1500 Grams Born in 2007**

Grades 1 to 4 Periventricular-Intraventricular Hemorrhage. This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007 and had a cranial ultrasound on or before day 28 of life.

Figure 2.22

**Severe Intraventricular Hemorrhage by Birth Weight
Infants 501-1500 Grams Born in 2007**

Grades 3 or 4 Periventricular-Intraventricular Hemorrhage. This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007 and had a cranial ultrasound on or before day 28 of life.

Figure 2.23

**Periventricular Leukomalacia by Birth Weight
Infants 501-1500 Grams Born in 2007**

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007 and had a cranial ultrasound exam prior to discharge.

Figure 2.24

**Eye Exams by Birth Weight
Infants 501-1500 Grams Born in 2007**

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room.

Figure 2.25

**Retinopathy of Prematurity by Birth Weight
Infants 501-1500 Grams Born in 2007**

Stages 1 to 4 ROP. This measure applies to all infants between 501 and 1500 grams who were born in 2007 and had a retinal exam.

Figure 2.26

**Severe Retinopathy of Prematurity, by Birth Weight
Infants 501-1500 Grams Born in 2007**

Stages 3 or 4 ROP. This measure applies to all infants between 501 and 1500 grams who were born in 2007 and had a retinal exam.

Figure 2.27

**Any Major Surgery by Birth Weight
Infants 501-1500 Grams Born in 2007**

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room.

Figure 2.28

**Any Breast Milk at Discharge by Birth Weight
Surviving Infants 501-1500 Grams Born in 2007**

This measure applies to all infants with birth weights between 501 and 1500 grams 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

Infants 501-1500 Grams Born in 2007

Section 3

Characteristics, Interventions, and Outcomes by Gestational Age Infants 501 to 1500 Grams Born in 2007

The tables and figures in this section show the number of admissions and infant characteristics, interventions and outcomes for infants with birth weights between 501 and 1500 grams by gestational age category (completed weeks).

Table 3.1 shows the number of infants for whom the various measures in Section 3 are applicable, by gestational age categories in completed weeks (All, < 24, 24-26, 27-29, 30-32, > 32). **Tables 3.2 to 3.9** 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) of all network centers (Network) by these gestational age categories.

Table 3.1

Number of Infants for Categories of Measures by Gestational Age Infants 501-1500 Grams Born in 2007

For the categories of measures included in this section, the number of infants at your center with birth weights between 501 and 1500 grams who were born in 2007. Numbers are tabulated by gestational age category and overall. For the CLD measures (All and Infants < 33 Weeks GA), the numbers are based on the algorithm described in the introduction to Table 1.2 in Section 1.

Table 3.2

Infant Characteristics by Gestational Age Infants 501-1500 Grams Born in 2007

Characteristics of infants by gestational age category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and quartile values for all centers in the Network 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 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 infants with birth weights between 501 and 1500 grams whose gestational age is known (Total Infants, Table 3.1).

Table 3.3

Initial Resuscitation by Gestational Age Infants 501-1500 Grams Born in 2007

Initial resuscitation by gestational age category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of

infants at your center and Network quartile values are shown for each of the measures. The measures in this table are applicable to all infants with birth weights between 501 and 1500 grams (Total Infants, Table 3.1).

Table 3.4
Respiratory Outcomes and Interventions by Gestational Age
Infants 501-1500 Grams Born in 2007

Respiratory outcomes and interventions by gestational age category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values are shown for each of the measures. Other than the exceptions listed below, measures in this table are applicable to all infants in the birth weight range, except those infants who die in the delivery room/initial resuscitation areas.

The Early CPAP measure is restricted to infants who received 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 received Early CPAP and indicates whether the infant received ETT ventilation after first receiving CPAP. The Surfactant after 2 Hours measure is restricted to infants who received surfactant.

The Oxygen at 28 Days and Oxygen at 36 Weeks measures only apply 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 measures for CLD at 36 weeks (CLD 36) and CLD at 36 Weeks for infants with gestational age less than 33 weeks (CLD 36 < 33) are based on the algorithm for chronic lung disease described in the introduction to Table 1.2 in Section 1.

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

Table 3.5
Other Outcomes and Interventions by Gestational Age
Infants 501-1500 Grams Born in 2007

Other outcomes and interventions by gestational age category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values are shown for each of the measures.

The percent of infants with late infection measures is limited to infants hospitalized after Day 3 of life. For infants who received a Cranial Ultrasound, the Any IVH measure is the percent of infants who had grades 1 to 4 Periventricular-Intraventricular Hemorrhage (PIH); Severe IVH reports the percent who had grades 3 or 4 PIH. Any ROP shows the percent of infants who had stage 1 to 4 retinopathy of prematurity among infants who had a retinal exam performed; Severe ROP shows the percent who had stage 3 or 4 ROP.

Table 3.6
Surgery by Gestational Age
Infants 501-1500 Grams Born in 2007

Surgical procedures by gestational age category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values are shown for each of the measures: PDA Ligation, NEC Surgery, ROP 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 infants except those who died in the delivery room/initial resuscitation area.

Table 3.7
Enteral Feeding
by Gestational Age and Discharge Status
Infants 501-1500 Grams Born in 2007

Enteral Feeding at Discharge (Home, Transfer, Died, All) by gestational age category for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values 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.

Table 3.8
Average Weight in Grams by Gestational Age
and Initial Disposition Status
Infants 501-1500 Grams Born in 2007

Average Weight in grams at Initial Disposition (Home, Transfer, Died, All) by gestational age category for infants with birth weights between 501 and 1500 grams who were born in 2007. The values at your center and Network quartile values are shown. Infants still hospitalized as of first birthday are included in the "Home" category. These measures apply to all infants for whom Initial Disposition is known. Infants who died in the delivery room/initial resuscitation area are excluded.

Table 3.9
Median Time to First Dose of Surfactant by Gestational Age
Infants 501-1500 Grams Born in 2007

Median Time to First Dose of Surfactant by gestational age category for infants with birth weights between 501 and 1500 grams who were born in 2007. The values at your center and Network quartile values are shown. These measures apply to all infants for whom discharge status is known, except infants who died in the delivery room/initial resuscitation area.

Figure 3.1 compares the number of admissions at your center with the number of admissions at all network centers by gestational age in completed weeks (< 24, 24-26, 27-29, 30-32, > 32). **Figures 3.2 to 3.28** compare the rates of individual infant characteristics, interventions and outcomes at your center to the rates at all network centers by these gestational age categories. In each of these figures, your center is represented by a large dot, indicating the number of infants or the percentage of the characteristic, intervention or outcome for the labeled gestational age range. The vertical bars in the figures represent the hospital quartiles (25th and the 75th percentile values) for the measure at all network 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 3.1
Number of Admissions by Gestational Age
Infants 501-1500 Grams Born in 2007

Figure 3.2
C-Section by Gestational Age
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007.

Figure 3.3
Inborn Births by Gestational Age
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007.

Figure 3.4
Conventional Ventilation by Gestational Age
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams 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
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams 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
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams 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
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.8
Pneumothorax by Gestational Age
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams 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
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007.

Figure 3.10
First Dose of Surfactant after 2 Hours by Gestational Age
Infants 501-1500 Grams Born in 2007

This measure applies to infants with birth weights between 501 and 1500 grams who were born in 2007 and who received surfactant.

Figure 3.11
Chronic Lung Disease by Gestational Age
Infants 501-1500 Grams Born in 2007

Chronic lung disease (CLD) at 36 weeks corrected gestational age. This measure applies to infants with birth weights between 501 and 1500 grams who are eligible, based on the algorithm described in the introduction to Section 1, Table 1.2.

Figure 3.12
Chronic Lung Disease for Infants < 33 Weeks GA by Gestational Age
Infants 501-1500 Grams Born in 2007

Chronic lung disease (CLD) at 36 weeks corrected gestational age for infants whose birth weight is between 501 and 1500 grams and whose gestational age (GA) is less than 33 weeks and who are eligible, based on the algorithm described in the introduction to Section 1, Table 1.2.

Figure 3.13
Patent Ductus Arteriosus by Gestational Age
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.14
Indomethacin by Gestational Age
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.15
Early Bacterial Infection by Gestational Age
Infants 501-1500 Grams Born in 2007

Early Bacterial Infection on or before Day 3 of life. This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.16
Late Bacterial Infection by Gestational Age
Infants 501-1500 Grams Born in 2007

Late Bacterial Infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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 3.17
Coagulase Negative Staph Infection by Gestational Age
Infants 501-1500 Grams Born in 2007

Coagulase Negative Staph Infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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
Nosocomial Bacterial Infection by Gestational Age
Infants 501-1500 Grams Born in 2007

Late Bacterial and/or Coagulase Negative Staph Infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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
Fungal Infection by Gestational Age
Infants 501-1500 Grams Born in 2007

Fungal Infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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
Cranial Ultrasound Exam by Gestational Age
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.21
Intraventricular Hemorrhage by Gestational Age
Infants 501-1500 Grams Born in 2007

Infants with Grades 1 to 4 of periventricular-intraventricular hemorrhage. This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007 and had a cranial ultrasound on or before day 28 of life.

Figure 3.22
Severe Intraventricular Hemorrhage by Gestational Age
Infants 501-1500 Grams Born in 2007

Infants with Grades 3 or 4 periventricular-intraventricular hemorrhage. This measure applies to all infants between 501 and 1500 grams who were born in 2007 and had a cranial ultrasound on or before day 28 of life.

Figure 3.23
Periventricular Leukomalacia by Gestational Age
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007 and had a cranial ultrasound exam.

Figure 3.24
Eye Exams by Gestational Age,
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 3.25
Retinopathy of Prematurity by Gestational Age
Infants 501-1500 Grams Born in 2007

Infants with Stages 1 to 4 ROP. This measure applies to all infants with birth weights between 501 and 1500 grams born in 2007 who had a retinal exam.

Figure 3.26
Severe Retinopathy of Prematurity by Gestational Age
Infants 501-1500 Grams Born in 2007

Infants with Stages 3 or 4 ROP. This measure applies to all infants with birth weights between 501 and 1500 grams born in 2007 who had a retinal exam.

Figure 3.27

Any Major Surgery by Gestational Age

Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room.

Figure 3.28

Any Breast Milk at Discharge by Gestational Age

Surviving Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007 and whose initial disposition 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

Infants 501-1500 Grams Born in 2007

Section 4

Characteristics, Interventions, and Outcomes By Birth Location

Infants 501-1500 Grams Born in 2007

The tables and figures in this section show the number of admissions and infant characteristics, interventions and outcomes by birth location categories. 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. **Table 4.2** gives the total number of infants at your center and the first and third quartile values (25th and 75th percentiles) of all network centers by birth weight and gestational age category and by birth location. **Tables 4.3 to 4.10** report the observed value at your center for the indicated characteristics, interventions and outcomes and the Network quartile values by birth location.

Table 4.1

Number of Infants for Categories of Measures by Birth Location Infants 501-1500 Grams Born in 2007

For the categories of measures included in this section, the number of infants at your center with birth weights between 501 and 1500 grams who were born in 2007. Numbers are tabulated by birth location categories and overall. For the CLD measures (All and Infants < 33 Weeks GA), the numbers are 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 Infants 501-1500 Grams Born in 2007

For infants with birth weights between 501 and 1500 grams who were born in 2007, the total number of infants and the percent of infants by 100-gram birth weight and gestational age categories are shown by birth location categories and overall. The values in parentheses are the quartile values for the percents at all Network hospitals.

Table 4.3

Infant Characteristics by Birth Location Infants 501-1500 Grams Born in 2007

Characteristics of infants by birth location categories and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and quartile values for all centers in the Network 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 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 infants with birth weights between 501 and 1500 grams (Total Infants, Table 4.1).

Table 4.4
Initial Resuscitation by Birth Location
Infants 501-1500 Grams Born in 2007

Initial resuscitation by birth location categories and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values are shown for each of the measures. The measures in this table are applicable to all infants with birth weights between 501 and 1500 grams (Total Infants, Table 4.1).

Table 4.5
Respiratory Outcomes and Interventions by Birth Location
Infants 501-1500 Grams Born in 2007

Respiratory outcomes and interventions by birth location categories and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values are shown for each of the measures. Other than the exceptions listed below, measures in this table are applicable to all infants in the birth weight range, except those infants who die in the delivery room/initial resuscitation areas.

The Early CPAP measure is restricted to infants who received 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 received Early CPAP and indicates whether the infant received ETT ventilation after first receiving CPAP. The Surfactant after 2 Hours measure is restricted to infants who received surfactant.

The Oxygen at 28 Days and Oxygen at 36 Weeks measures only apply 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 measures for CLD at 36 weeks (CLD 36) and CLD at 36 Weeks for infants with gestational age less than 33 weeks (CLD 36 < 33) are based on the algorithm for chronic lung disease described in the introduction to Table 1.2 in Section 1.

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

Table 4.6
Other Outcomes and Interventions by Birth Location
Infants 501-1500 Grams Born in 2007

Other outcomes and interventions by birth location categories and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values are shown for each of the measures.

The percent of infants with late infection measures is limited to infants hospitalized after Day 3 of life. For infants who received a Cranial Ultrasound, the Any IVH measure is the

percent of infants who had grades 1 to 4 Periventricular-Intraventricular Hemorrhage (PIH); Severe IVH reports the percent who had grades 3 or 4 PIH. Any ROP shows the percent of infants who had stage 1 to 4 ROP among infants who had a retinal exam performed; Severe ROP shows the percent who had stage 3 or 4 ROP.

Table 4.7
Surgery by Birth Location
Infants 501-1500 Grams Born in 2007

Surgical procedures by birth location categories and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values are shown for each of the measures: PDA Ligation, NEC Surgery, ROP 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 infants except those who died in the delivery room/initial resuscitation area.

Table 4.8
Enteral Feeding by Birth Location and Discharge Status
Infants 501-1500 Grams Born in 2007

Enteral Feeding at Discharge (Home, Transfer, Died, All) by birth location categories for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values 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.

Table 4.9
Average Weight in Grams by Birth Location
and Initial Disposition Status
Infants 501-1500 Grams Born in 2007

Average Weight in grams at Initial Disposition (Home, Transfer, Died, All) by birth location categories for infants with birth weights between 501 and 1500 grams who were born in 2007. The values at your center and Network quartile values are shown. Infants still hospitalized as of first birthday are included in the "Home" category. These measures apply to all infants for whom Initial Disposition is known. Infants who died in the delivery room/initial resuscitation area are excluded.

Table 4.10

**Median Time to First Dose of Surfactant by Birth Location
Infants 501-1500 Grams Born in 2007**

Median Time to First Dose of Surfactant by 100-gram birth weight category, gestational age category and birth location categories for infants with birth weights between 501 and 1500 grams who were born in 2007. The values at your center and Network quartile values are shown. These measures apply to all infants for whom discharge status is known, except infants who died in the delivery room/initial resuscitation area.

Figures 4.1 to 4.27 show summary data for infants with birth weights between 501 and 1500 grams who were born in 2007 by birth location categories and overall. 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 quartile values (25th and the 75th percentile values) for all network 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
Infants 501-1500 Grams Born in 2007**

**Figure 4.2
C-Section by Birth Location
Infants 501-1500 Grams Born in 2007**

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007.

**Figure 4.3
Conventional Ventilation by Birth Location
Infants 501-1500 Grams Born in 2007**

This measure applies to all infants with birth weights between 501 and 1500 grams 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
Infants 501-1500 Grams Born in 2007**

This measure applies to all infants with birth weights between 501 and 1500 grams 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
Infants 501-1500 Grams Born in 2007**

This measure applies to all infants with birth weights between 501 and 1500 grams 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
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.7
Pneumothorax by Birth Location
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams 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
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007.

Figure 4.9
First Dose of Surfactant after 2 Hours by Birth Location
Infants 501-1500 Grams Born in 2007

This measure applies to infants with birth weights between 501 and 1500 grams who were born in 2007 and received surfactant.

Figure 4.10
Chronic Lung Disease by Birth Location
Infants 501-1500 Grams Born in 2007

Chronic lung disease (CLD) at 36 weeks corrected gestational age for infants born in 2007. This measure applies to infants with birth weights between 501 and 1500 grams who are eligible, based on the algorithm described in the introduction to Table 1.2 in Section 1.

Figure 4.11
Chronic Lung Disease for Infants < 33 Weeks GA by Birth Location
Infants 501-1500 Grams Born in 2007

Chronic lung disease (CLD) at 36 weeks corrected gestational age for infants with birth weights between 501 and 1500 grams 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 Table 1.2 in Section 1.

Figure 4.12
Patent Ductus Arteriosus by Birth Location
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.13
Indomethacin by Birth Location
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.14
Early Bacterial Infection by Birth Location
Infants 501-1500 Grams Born in 2007

Early Bacterial Infection on or before Day 3 of life. This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.15
Late Bacterial Infection by Birth Location
Infants 501-1500 Grams Born in 2007

Late Bacterial Infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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 4.16
Coagulase Negative Staph Infection by Birth Location
Infants 501-1500 Grams Born in 2007

Coagulase Negative Staph Infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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
Nosocomial Bacterial Infection by Birth Location
Infants 501-1500 Grams Born in 2007

Late Bacterial and/or Coagulase Negative Staph Infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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
Fungal Infection by Birth Location
Infants 501-1500 Grams Born in 2007

Fungal infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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
Cranial Ultrasound Exam by Birth Location
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room/initial resuscitation area.

Figure 4.20
Intraventricular Hemorrhage by Birth Location
Infants 501-1500 Grams Born in 2007

Grades 1 to 4 Periventricular-Intraventricular Hemorrhage. This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007 and had a cranial ultrasound on or before day 28 of life.

Figure 4.21
Severe Intraventricular Hemorrhage by Birth Location
Infants 501-1500 Grams Born in 2007

Grades 3 or 4 Periventricular-Intraventricular Hemorrhage. This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007 and had a cranial ultrasound on or before day 28 of life.

Figure 4.22
Periventricular Leukomalacia by Birth Location
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007 and had a cranial ultrasound exam prior to discharge.

Figure 4.23
Eye Exams by Birth Location
Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room.

Figure 4.24
Retinopathy of Prematurity by Birth Location
Infants 501-1500 Grams Born in 2007

Stages 1 to 4 ROP. This measure applies to all infants between 501 and 1500 grams who were born in 2007 and had a retinal exam.

Figure 4.25
Severe Retinopathy of Prematurity, by Birth Location
Infants 501-1500 Grams Born in 2007

Stages 3 or 4 ROP. This measure applies to all infants between 501 and 1500 grams who were born in 2007 and had a retinal exam.

Figure 4.26

Any Major Surgery by Birth Location

Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams who were born in 2007, except those who die in the delivery room.

Figure 4.27

Any Breast Milk at Discharge by Birth Location

Surviving Infants 501-1500 Grams Born in 2007

This measure applies to all infants with birth weights between 501 and 1500 grams 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

Characteristics, Interventions, and Outcomes by Birth Weight and Compared to NICUs of Same Type

Infants 501-1500 Grams Born in 2007

Section 5

Characteristics, Interventions, and Outcomes by Birth Weight and Compared to NICUs of Same Type Infants 501-1500 Grams Born in 2007

The tables and figures in this section show the number of admissions and infant characteristics, interventions and outcomes, within your center's NICU type, by birth weight category for infants with birth weights between 501 and 1500 grams. Centers who do not report survey data or who do not acknowledge their NICU type do not receive tables and figures in this section. The three NICU Types are defined as follows:

Type A

Centers which have a restriction on assisted ventilation or which only perform minor surgery for newborn infants.

Type B

Centers with no restriction on assisted ventilation and which perform major surgery for newborn infants, including one or more of the following: omphalocele repair, ventriculo-peritoneal shunt, TEF/esophageal repair, bowel resection/reanastomosis, meningomyelocele repair, cardiac catheterization and PDA ligation.

Type C

Centers with the capabilities of Type B centers and which also perform cardiac surgery requiring bypass for newborn infants.

Table 5.1 shows the number of infants for whom the various measures in Section 5 are applicable, by four birth weight categories in grams (501-750, 751-1000, 1001-1250, 1251-1500) and for ALL infants. **Tables 5.2 to 5.13** 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) of all Vermont Oxford Network Centers with the same NICU type as your center (Type A, B, or C). By definition, at least 25% of the centers in your center's NICU Type will be at or below the 25th percentile and at least 25% of the centers will be at or above the 75th percentile.

Table 5.1

Number of Infants for Categories of Measures by Birth Weight Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

Number of infants at your center with birth weights between 501 and 1500 grams who were born in 2007 for the various categories of measures included in this section. Numbers are tabulated by 250-gram birth weight category and overall. For the CLD measures (All and Infants < 33 Weeks GA), the numbers are based on the algorithm described in the introduction to Table 1.2 in Section 1.

Table 5.2**Infant Characteristics by Birth Weight****Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type**

Characteristics of infants by 250-gram birth weight category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and quartile values for all centers in your center's NICU Type 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. The percent of infants with 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 infants with birth weights between 501 and 1500 grams (Total Infants, Table 5.1).

Table 5.3**Initial Resuscitation by Birth Weight****Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type**

Initial resuscitation by 250-gram birth weight category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and quartile values for all centers in your center's NICU Type are shown for each of the measures. The measures in this table are applicable to all infants with birth weights between 501 and 1500 grams (Total Infants, Table 5.1).

Table 5.4**Respiratory Outcomes and Interventions by Birth Weight****Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type**

Respiratory outcomes and interventions by 250-gram birth weight category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and quartile values for all centers in your center's NICU Type are shown for each of the measures. Other than the exceptions listed below, measures in this table are applicable to all infants in the birth weight range, except those infants who die in the delivery room/initial resuscitation areas.

The Early CPAP measure is restricted to infants who received 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 received Early CPAP and indicates whether the infant received ETT ventilation after first receiving CPAP. The Surfactant after 2 Hours measure is restricted to infants who received surfactant.

The Oxygen at 28 Days and Oxygen at 36 Weeks measures only apply 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 measures for CLD at 36 weeks (CLD 36) and CLD at 36 Weeks for infants with gestational age less than 33 weeks (CLD 36 < 33) are based on the algorithm for chronic lung disease described in the introduction to Table 1.2 in Section 1.

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

Table 5.5

Other Outcomes and Interventions by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

Other outcomes and interventions by 250-gram birth weight category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and quartile values for all centers in your center's NICU Type are shown for each of the measures.

The percent of infants with late infection measures is limited to infants hospitalized after Day 3 of life. For infants who received a cranial ultrasound, the Any IVH measure is the percent of infants who had grades 1 to 4 periventricular-intraventricular hemorrhage (PIH); Severe IVH reports the percent who had grades 3 or 4 PIH. Any ROP shows the percent of infants who had stage 1 to 4 retinopathy of prematurity among infants who had a retinal exam performed; Severe ROP shows the percent who had stage 3 or 4 ROP.

Table 5.6

Surgery by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

Surgical procedures by 250-gram birth weight category and overall for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and quartile values for all centers in your center's NICU Type are shown for each of the measures: PDA Ligation, NEC Surgery, ROP Surgery, Other Major Surgery, Major Surgery by Category, and Any Major Surgery. Procedures not included in major surgery are also listed. These measures apply to all infants except those who died in the delivery room/initial resuscitation area.

Table 5.7

Enteral Feeding by Birth Weight and Discharge Status

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

Enteral Feeding at Discharge (Home, Transfer, Died, All) by 250-gram birth weight category for infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and Network quartile values 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.

Table 5.8**Average Weight in Grams by Birth Weight and Initial Disposition Status
Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type**

Average Weight in grams at initial disposition (Home, Transfer, Died, All) by 250-gram birth weight category for infants with birth weights between 501 and 1500 grams who were born in 2007. The values at your center and quartile values for all centers in your center's NICU Type are shown. Infants still hospitalized as of first birthday are included in the "Home" category. These measures apply to all infants for whom Initial Disposition is known. Infants who died in the delivery room/initial resuscitation area are excluded.

Table 5.9**Median Time to First Dose of Surfactant by Birth Weight
Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type**

Median Time to First Dose of Surfactant by 100-gram birth weight category for infants with birth weights between 501 and 1500 grams who were born in 2007. The values at your center and quartile values for all centers in your center's NICU Type (Group) are shown. These measures are restricted to infants who received surfactant and for whom age at first dose of surfactant is known.

Table 5.10**Days in Hospital by Final Disposition, Admission Status, and Birth Weight
Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type**

Days in hospital for infants with birth weights between 501 and 1500 grams, 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, compared to and quartile values for all centers in your center's NICU Type (Group). Infants still hospitalized as of first birthday are included in the Home category.

Table 5.11**Average Total Hospital Stay by Birth Weight and Final Disposition Status
Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type**

Average Total Hospital Stay in days for infants with birth weights between 501 and 1500 grams. The values at your center and quartile values for all centers in your center's NICU Type (Group) are shown by birth weight category and final disposition status (Home, Died, All). Infants still hospitalized as of first birthday are included in the "Home" category.

Table 5.12**Disposition Status by Birth Weight
Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type**

Disposition status measures by birth weight category and overall for all infants with birth weights between 501 and 1500 grams by disposition status and reason for transfer. The values at your center and quartile values for all centers in your center's NICU Type

(Group) are shown by birth weight category. Disposition status categories include Initial Disposition (Home, Transfer, Died, Unknown), Post Transfer Disposition for infants who transferred (Home, Transfer, Died, Readmit, Unknown) and Final Disposition Status (Died, Alive, Unknown) for all infants, including infants who transferred from your center to other hospitals. Infants who are still hospitalized as of first birthday have a Final Disposition Status of "Alive" and are elsewhere included in the "Home" category. The Reason for Transfer categories include Growth, Medical/Diagnostic, Surgery, Chronic Care, Other and Unknown for infants who transferred.

Table 5.13

Survival with No Known Morbidity and Morbidity among Surviving Infants by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

Survival, survival with no known morbidity and morbidity among surviving infants with birth weights between 501 and 1500 grams who were born in 2007. The percent of infants at your center and quartile values for all centers in your center's NICU Type are shown for each of the measures. Some hospitals with missing data may not receive information in this table.

Figures 5.1 to 5.31 show summary data for infants with birth weights between 501 and 1500 grams by 100-gram birth weight category, at your center compared to all centers of your center's NICU Type. In each of these figures, your center is represented by a large dot, indicating the number of infants or the percentage of the characteristic, intervention or outcome for the labeled birth weight range. The vertical bars in the figures represent the hospital quartile values (25th and the 75th percentile values) for all centers in your center's NICU Type. 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 5.1

Number of Admissions by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

Figure 5.2

C-Section by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants with birth weights between 501 and 1500 grams.

Figure 5.3

Inborn Births by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants with birth weights between 501 and 1500 grams.

Figure 5.4

Conventional Ventilation by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 5.5

High Frequency Ventilation by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 5.6:

High Flow Nasal Cannula by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 5.7

Nasal IMV or SIMV by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 5.8

Pneumothorax by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 5.9

Surfactant at Any Time by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants with birth weights between 501 and 1500 grams.

Figure 5.10

First Dose of Surfactant after 2 Hours by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to infants with birth weights between 501 and 1500 grams who received surfactant.

Figure 5.11

Chronic Lung Disease by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

Chronic lung disease (CLD) at 36 weeks corrected gestational age. This measure applies to infants who meet the conditions of the algorithm described in the introduction to Section 1, Table 1.2. Table 5.1 shows the actual number of infants included at your center.

Figure 5.12

**Chronic Lung Disease for Infants < 33 Weeks GA by Birth Weight
Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type**

Chronic lung disease (CLD) at 36 weeks corrected gestational age for infants whose gestational age is less than 33 weeks. This measure applies to infants in the gestational age range who meet the conditions of the algorithm described in the introduction to Section 1, Table 1.2. Table 5.1 shows the actual number of infants included at your center.

Figure 5.13

**Patent Ductus Arteriosus by Birth Weight
Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type**

This measure applies to all infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 5.14

**Indomethacin by Birth Weight
Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type**

This measure applies to all infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 5.15

**Early Bacterial Infection by Birth Weight
Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type**

Early Bacterial Infection on or before Day 3 of life. This measure applies to all infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 5.16

**Late Bacterial Infection by Birth Weight
Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type**

Late Bacterial infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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 5.17

**Coagulase Negative Staph Infection by Birth Weight
Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type**

Coagulase Negative Staph infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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 5.18

Nosocomial Bacterial Infection by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

Late Bacterial and/or Coagulase Negative Staph infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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 5.19

Fungal Infection by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure is applicable to infants with birth weights between 501 and 1500 grams 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 5.20

Cranial Ultrasound Exam by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 5.21

Intraventricular Hemorrhage by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants who had a cranial ultrasound on or before day 28 of life and indicates the percent of infants with Grades 1 to 4 of PIH.

Figure 5.22

Severe Intraventricular Hemorrhage by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants who had a cranial ultrasound on or before day 28 of life and indicates the percent of infants with Grades 3 or 4 of PIH.

Figure 5.23

Periventricular Leukomalacia by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants with birth weights between 501 and 1500 grams who had a cranial ultrasound exam.

Figure 5.24

Eye Exams by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 5.25

Retinopathy of Prematurity by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants who had a retinal exam and indicates the percent of infants with Stages 1 to 4 of ROP.

Figure 5.26

Severe Retinopathy of Prematurity by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants who had a retinal exam and indicates the percent of infants with Stages 3 or 4 of ROP.

Figure 5.27

Any Major Surgery by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 5.28

Any Breast Milk at Discharge by Birth Weight

Surviving Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

This measure applies to all infants with birth weights between 501 and 1500 grams 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.

Figure 5.29

Median Total Hospital Stay by Birth Weight

Surviving Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

Median Total Hospital Stay in days for surviving infants 501 to 1500 grams by 100-gram birth weight category.

Figure 5.30

Survival with No Known Morbidity by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

Of all infants with birth weights between 501 and 1500 grams and known final disposition status, the percentage who survived with no known morbidity or Extreme Length of Stay (LOS). Morbidities considered include Severe Intraventricular Hemorrhage (Severe IVH), one or more of the late infections – Late Bacterial, Coagulase Negative Staph or Fungal (Any Late Infection), Chronic Lung Disease (CLD), Pneumothorax (PNTX), Periventricular Leukomalacia (PVL) and Necrotizing Enterocolitis (NEC). The CLD measure is based on an 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. Extreme LOS is defined as Total Hospital Stay greater than the 90% upper bound for the infant's predicted total stay, based on the risk adjustment model discussed in Section 8, Figure 8.4. Note that infants with extreme Length of Stay are listed in Section 8, Table 8.8. Infants who survive and have none of the listed morbidities/Extreme LOS are assigned a "Yes" response; infants who die or are

known to have one or more of the listed morbidities are assigned a “No” response. Some hospitals with missing final disposition status may not receive information in this figure.

Figure 5.31

Mortality by Birth Weight

Infants 501-1500 Grams Born in 2007, Compared to NICUs of Same Type

Percentage of infants with birth weights between 501 and 1500 grams by birth weight category who died at your center and quartile values for all centers in your center’s NICU Type.

Section 6

Lists of Infants with Selected Characteristics, Interventions and Outcomes

Infants 501-1500 Grams Born in 2007

Section 6

Lists of Infants with Selected Characteristics, Interventions and Outcomes Infants 501-1500 Grams Born in 2007

Tables 6.1 to 6.6 list infants at your center with birth weights between 501 and 1500 grams who had selected characteristics, outcomes and interventions (**Tables 6.1-6.4**), as well as a listing of infants who had surgery or major birth defects (**Table 6.5 and 6.6**, respectively). These tables can be used to identify individual infants with specific outcomes or interventions for review.

Table 6.1

Infant List: Initial Characteristics and Survival Status Infants 501-1500 Grams Born in 2007

List of infants with birth weights between 501 and 1500 grams at your center 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, Gender (Male or Female), Race (Black, Hispanic, White, Asian, Native American and Other), Multiple Gestation (Yes or No), Prenatal Care (Yes or No), Antenatal Steroids (Yes or No), Vaginal Delivery (Yes or No), temperature within one hour of admission to your NICU in degrees centigrade (Admiss Temp) and Survival Status (Died or Alive).

Table 6.2

Infant List: Initial Resuscitation Infants 501-1500 Grams Born in 2007

List of all infants with birth weights between 501 and 1500 grams at your center 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, and interventions in the delivery room/initial resuscitation area (Yes/No/Unknown): Oxygen, Face Mask Ventilation, Intubation, Epinephrine, Chest Compression, and Surfactant.

Table 6.3

Infant List: Respiratory Interventions Infants 501-1500 Grams Born in 2007

List of all infants at your center with birth weights between 501 and 1500 grams 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, and respiratory measures applicable after the infant leaves the delivery room/initial resuscitation area (Yes/No/Unknown): Oxygen, Conventional Ventilation, High Flow Nasal Cannula (HFN Cannula), Nasal IMV or SIMV (Nasal IMV), High Frequency Ventilation (Hifi), Nasal CPAP, CPAP before ETT Ventilation, Surfactant and Steroids for CLD. This list does not include infants who died in the delivery room/initial resuscitation area. The measure of CPAP before ETT Vent is not applicable (N/A) to infants that did not receive CPAP.

Table 6.4**Infant List: Selected Morbidities and Interventions
Infants 501-1500 Grams Born in 2007**

List of all infants with birth weights between 501 and 1500 grams at your center who have the following morbidities and interventions: No Antenatal Steroids (ID numbers of infants where Antenatal Steroids were not given are listed), Surfactant after 2 Hours, Indomethacin, Respiratory Distress Syndrome, Chronic Lung Disease (see description of algorithm in Section 1, Table 1.2), Intraventricular Hemorrhage (IVH), Severe IVH, Periventricular Leukomalacia (PVL), Pneumothorax, Gastrointestinal Perforation, Necrotizing Enterocolitis (NEC), Patent Ductus Arteriosus (PDA), Early Bacterial Sepsis (on or before Day 3 of life), Coagulase Negative Staph Infection (after Day 3), Late Bacterial Infection (after Day 3), Fungal Infection (after Day 3), Nosocomial Bacterial Infection (Coagulase Negative Staph and/or Late Bacterial Infection after Day 3), Retinopathy of Prematurity (ROP), Severe ROP, and No Human Milk at Discharge for Surviving Infants (ID numbers of infants not receiving human milk at discharge from your center are listed). The list is ordered by Patient ID for each condition and includes Patient ID number, Birth Weight in grams, Gestational Age in completed weeks, Birth Location (Inborn or Outborn), Day of Admission, and Survival Status (Alive, Died or Unknown).

Table 6.5**Infant List: Surgery
Infants 501-1500 Grams Born in 2007 Who Had Any Surgery**

List of infants with birth weights between 501 and 1500 grams at your center who had surgery. The list is ordered by increasing Patient ID number and includes Birth Weight in grams, Gestational Age in completed weeks, Sex (M or F), Birth Location (Inborn or Outborn), Day of Admission for outborn infants, Survival Status (Alive, Died, Unknown) and a description of all surgeries performed.

Table 6.6**Infant List: Major Birth Defects
Infants 501-1500 Grams Born in 2007**

List of infants with birth weights between 501 and 1500 grams at your center who had major birth defects. The list is ordered by Patient ID number and includes Birth Weight in grams, Gestational Age in completed weeks, Sex (M or F), Birth Location (Inborn or Outborn), Day of Admission for outborn infants, Survival Status (Alive, Died, Unknown), and a description of each malformation.

Section 7

Disposition Status, Mortality, and Morbidity among Surviving Infants

Infants 501-1500 Grams Born in 2007

Section 7

Disposition Status, Mortality, and Morbidity

Surviving Infants 501-1500 Grams, Born in 2007

The figures and tables in this section provide information on disposition status, survival without known morbidity, morbidity in infants who survived and mortality. Observed percentages at your center and the quartiles for all centers (Network) are presented by birth weight category (grams), gestational age category (completed weeks) and birth location (inborn/outborn/day of admission for outborn infants) in Tables 7.1 to 7.6 and Figures 7.1 to 7.6. These report the percentage of infants with the outcome and the first and third quartile percents (25th and 75th percentiles) for all Centers (Network). 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. 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 Centers. Tables 7.7 and 7.8 list the infants who died or who had unknown survival status.

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

Table 7.1

Disposition Status by Birth Weight Infants 501-1500 Grams Born in 2007

Disposition status measures by birth weight category and overall for all infants with birth weights between 501 and 1500 grams by disposition status and reason for transfer. The values at your center and Network quartile values are shown by birth weight category. Disposition status categories include Initial Disposition (Home, Transfer, Died, Unknown), Post Transfer Disposition for infants who transferred (Home, Transfer, Died, Readmit, Unknown) and Final Disposition Status (Died, Alive, Unknown) for all infants, including infants who transferred from your center to other hospitals. Infants who are still hospitalized as of first birthday have a Final Disposition Status of "Alive" and are elsewhere included in the "Home" category. The Reason for Transfer categories include Growth, Medical/Diagnostic, Surgery, Chronic Care, Other and Unknown for infants who transferred. The numbers of infants included are shown in Table 2.1.

Table 7.2

Disposition Status by Gestational Age Infants 501-1500 Grams Born in 2007

Disposition status measures discussed for Table 7.1 above by gestational age category for infants with birth weights between 501 and 1500 grams. The numbers of infants included in the table are shown in Table 3.1.

Table 7.3
Disposition Status by Birth Location
Infants 501-1500 Grams Born in 2007

Disposition status measures discussed for Table 7.1 above by birth location categories for infants with birth weights between 501 and 1500 grams. 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). The numbers of infants included in the table are shown in Table 4.1.

Figure 7.1
Mortality by Birth Weight
Infants 501-1500 Grams Born in 2007

Percentage of all infants with birth weights between 501 and 1500 grams who died at your center and Network quartile percents by birth weight category.

Figure 7.2
Survival with No Known Morbidity by Birth Weight
Infants 501-1500 Grams Born in 2007

Of all infants with birth weights between 501 and 1500 grams and known final disposition status, the percentage who survived with no known morbidity or Extreme Length of Stay (LOS). Morbidities considered include Severe Intraventricular Hemorrhage (Severe IVH), one or more of the late infections – Late Bacterial, Coagulase Negative Staph or Fungal (Any Late Infection), Chronic Lung Disease (CLD), Pneumothorax (PNTX), Periventricular Leukomalacia (PVL) and Necrotizing Enterocolitis (NEC). The CLD measure is based on an 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. Extreme LOS is defined as 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 8, Figure 8.4. Note that infants with Extreme Length of Stay are listed in Section 8, Table 8.8. Infants who survive and are not known to have any of the listed morbidities/Extreme LOS are assigned a “Yes” response; infants who die or are known to have one or more of the listed morbidities are assigned a “No” response. Some hospitals with missing final disposition status may not receive information in this figure.

Table 7.4
Survival with No Known Morbidity and Morbidity among Surviving Infants
by Birth Weight
Infants 501-1500 Grams Born in 2007

Percent of all infants with birth weights between 501 and 1500 grams who survived and who survived with no known morbidity. Among those who survived, the percent at your center and Network quartile percents of infants who had the indicated morbidities or Extreme Length of Stay by birth weight category and overall. The specified morbidity measures are reported as a percentage of all surviving infants (see Table 2.1). For the Morbidity in Survivors measures, surviving infants who are not known to have the listed morbidity/Extreme LOS are assigned a “No” response; surviving infants who are known

to have the listed morbidity are assigned a “Yes” response. Some hospitals with missing data may not receive information in this table.

Figure 7.3

Mortality by Gestational Age

Infants 501-1500 Grams Born in 2007

Percentage of infants with birth weights between 501 and 1500 grams who died at your center and Network quartile percents by gestational age category.

Figure 7.4

Survival with No Known Morbidity by Gestational Age

Infants 501-1500 Grams Born in 2007

Survival with no known morbidity by gestational age for infants with birth weights between 501 and 1500 grams. The specified morbidity measures are reported as a percentage of surviving infants for whom data are available (see Table 3.1 for the number of infants considered). Some hospitals with missing data may not receive information in this figure.

Figure 7.5

Mortality by Birth Location

Infants 501-1500 Grams Born in 2007

Percentage of infants with birth weights between 501 and 1500 grams who died at your center and Network quartile percents by birth location categories.

Figure 7.6

Survival with No Known Morbidity by Birth Location

Infants 501-1500 Grams Born in 2007

Survival with no known morbidity by birth location categories for infants with birth weights between 501 and 1500 grams. The specified morbidity measures are reported as a percentage of surviving infants for whom data are available (see Table 3.1 for the number of infants considered). Some hospitals with missing data may not receive information in this figure.

Table 7.5

Survival with No Known Morbidity and Morbidity among Surviving Infants by Gestational Age

Infants 501-1500 Grams Born in 2007

Percent of all infants with birth weights between 501 and 1500 grams who survived and who survived with no known morbidity by gestational age. Among those who survived, the percent at your center and Network quartile percents of infants who had the indicated morbidities or Extreme Length of Stay by birth weight category and overall. The specified morbidity measures are reported as a percentage of all surviving infants (see Table 3.1). For the Morbidity in Survivors measures, surviving infants who are not known to have the listed morbidity/Extreme LOS are assigned a “No” response; surviving infants who are known to have the listed morbidity are assigned a “Yes” response. Some hospitals with missing data may not receive information in this table.

Table 7.6**Survival with No Known Morbidity and Morbidity among Surviving Infants by Birth Location****Infants 501-1500 Grams Born in 2007**

Percent of all infants with birth weights between 501 and 1500 grams who survived and who survived with no known morbidity by birth location categories. Among those who survived, the percent at your center and Network quartile percents of infants who had the indicated morbidities or Extreme Length of Stay by birth weight category and overall. The specified morbidity measures are reported as a percentage of all surviving infants (see Table 4.1). For the Morbidity in Survivors measures, surviving infants who are not known to have the listed morbidity/Extreme LOS are assigned a “No” response; surviving infants who are known to have the listed morbidity are assigned a “Yes” response. Some hospitals with missing data may not receive information in this table.

Table 7.7**Infant List: Mortality****Infants 501-1500 Grams Born in 2007**

List of infants at your center with birth weights between 501 and 1500 grams who died, in order of Patient ID. The list includes Birth Weight, Gestational Age (GA) in completed weeks, Birth Location (Inborn: Yes or No), Day of Admission for outborn infants, Small for Gestational Age (Yes or No), Birth Defect (Yes or No), and whether the infant received Life Support (Yes or No).

Table 7.8**Infant List: Unknown Survival Status****Infants 501-1500 Grams Born in 2007**

List of infants at your center with birth weights between 501 and 1500 grams who had unknown survival status, in order of Patient ID. 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 (Yes or No), Birth Defect (Yes or No), and Discharge Status at initial disposition (Transferred or Unknown).

Section 8

Length of Stay

Infants 501-1500 Grams Born in 2007

Section 8

Length of Stay

Infants 501-1500 Grams Born in 2007

The tables and figures in this section report observed Initial LOS and Total Hospital Stay for all infants with birth weights between 501 and 1500 grams, as well as figures for the following measures in surviving infants: Adjusted Total Hospital Stay, Total Hospital Stay displayed as a control chart, and Gestational Age at Discharge. The observed LOS measures are shown by Birth Weight category and overall, by Gestational Age category (completed weeks) and by Birth Location (inborn/outborn/day of admission for outborn infants).

Initial Length of Stay (LOS) is the number of days from admission to your center until Initial Disposition (Home, Transfer, Death, or Still Hospitalized as of First Birthday, whichever is soonest), 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.

Adjusted Total Hospital Stay is based on a multivariable risk adjustment model (see the description for Figure 8.3 below). The control chart (Figure 8.5) for Total Hospital Stay shows data for your center from 1998 to 2007, if your center has participated in the Network database for this entire period. The control chart is not provided for centers with less than four years of data. Gestational Age at Discharge is plotted separately for surviving infants who are small for gestational age (SGA) and infants not SGA, and the charts show gestational age at discharge for infants at your center plotted on Network percentile curves by gestational age category (Figures 8.6 and 8.7).

In many of the tables and figures, the average or median Initial LOS or Total Hospital Stay is shown for your center along with first and third Network quartile values (25th and 75th Percentile). Your center values are represented by large dots in the figures. If the values are ordered from lowest to highest, the median is the middle value. 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 8.1

Days in Hospital by Final Disposition, Admission Status, and Birth Weight Infants 501-1500 Grams Born in 2007

Days in hospital for infants with birth weights between 501 and 1500 grams, 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 8.2
Average Total Hospital Stay
by Birth Weight and Final Disposition Status
Infants 501-1500 Grams Born in 2007

Average Total Hospital Stay in days for infants with birth weights between 501 and 1500 grams. Values are shown for your center with Network quartiles, by birth weight category and Final Disposition status (Home, Died, All). Infants still hospitalized as of first birthday are included in the "Home" category.

Figure 8.1
Median Total Hospital Stay
by Birth Weight
Surviving Infants 501-1500 Grams Born in 2007

Median Total Hospital Stay in days for surviving infants 501 to 1500 grams by 100-gram birth weight category. Values for your center are represented by a large dot. Network quartile values are represented by high-low bars.

Table 8.3
Days in Hospital by Final Disposition, Admission Status, and Gestational Age
Infants 501-1500 Grams Born in 2007

Days in hospital for infants with birth weights between 501 and 1500 grams, 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 8.4
Average Total Hospital Stay
by Gestational Age and Final Disposition Status
Infants 501-1500 Grams Born in 2007

Average Total Hospital Stay in days for infants with birth weights between 501 and 1500 grams. Values are shown for your center with Network quartiles, by gestational age category and Final Disposition status (Home, Died, All). Infants still hospitalized as of first birthday are included in the "Home" category.

Figure 8.2
Median Total Hospital Stay
by Gestational Age
Surviving Infants 501-1500 Grams Born in 2007

Median Total Hospital Stay in days for surviving infants 501 to 1500 grams by gestational age category. Values for your center are represented by a large dot. Network quartile values are represented by high-low bars.

Table 8.5
Days in Hospital by Final Disposition, Admission Status, and Birth Location
Infants 501-1500 Grams Born in 2007

Days in hospital for infants with birth weights between 501 and 1500 grams, by birth location 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 8.6
Average Total Hospital Stay
by Birth Location and Final Disposition Status
Infants 501-1500 Grams Born in 2007

Average Total Hospital Stay in days for infants with birth weights between 501 and 1500 grams. Values are shown for your center with Network quartiles, by birth location categories and Final Disposition status (Home, Died, All). Infants still hospitalized as of first birthday are included in the "Home" category.

Figure 8.3
Median Total Hospital Stay
by Birth Location
Surviving Infants 501-1500 Grams Born in 2007

Median Total Hospital Stay in days for surviving infants 501 to 1500 grams by birth location categories. Values for your center are represented by a large dot. Network quartile values are represented by high-low bars.

Figure 8.4
Adjusted Average Total Hospital Stay (LOS)
Surviving Infants 501-1500 Grams Born in 2007

Adjusted Average Total Hospital Stay is presented for all Network centers for surviving infants born in 2007, with birth weights between 501 and 1500 grams.

The Adjusted Average Total Hospital Stay is a geometric mean calculated for each hospital using analysis of covariance. A multivariable model is used to predict the logarithm of Total Hospital Stay. This equation includes the following predictor variables:

Birth Weight, Ventilated, Respiratory Distress Syndrome, Surgery (other than ROP surgery), 1 Minute APGAR Score, Small for Gestational Age, Reason for Transfer, Vaginal Delivery, Birth Location, Sex, Prenatal Care, Maternal Race/Ethnicity, and Major Birth Defect.

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.

Figure 8.5
Average Annual Total Hospital Stay
Surviving Infants 501-1500 Grams, 1998 to 2007

For centers with four or more years of data, Figure 8.5 is a control chart showing Total Hospital Stay for surviving infants at your center with birth weights between 501 and 1500 grams. Upper and lower control limits are set three standard deviations from the mean value. Data are presented for 1998 through 2007 if your center submitted data for this entire period. Otherwise only those years during which your center submitted data are included. If your center skipped data submission for some years, only the most recent non-skipped years will be charted.

Figure 8.6
Gestational Age at Discharge - Excluding SGA Infants
Surviving AGA Infants 501-1500 Grams with No Major Birth Defects Born in 2007

Gestational Age at Discharge is calculated based on the infant's Total Hospital Stay. Each surviving infant 501 to 1500 grams at your center whose gestational age at discharge is between 34 and 50 weeks (excluding SGA infants, infants with major birth defects and those with missing length of stay data) is plotted on this figure as a point on a gestational age curve. The curves on which the points are plotted represent the cumulative experience at all Vermont Oxford Network Centers in 2007. Please note that a single point can represent one or more infants at your center within the applicable gestational age category.

Four curves, for four separate gestational age categories, are shown (<26 weeks, 26-27 weeks, 28-29 weeks and >29 weeks). These curves allow you to compare the gestational age at discharge for individual infants at your center with the percentage of all Network infants in that gestational age category who were discharged by that gestational age. For instance, if an infant born at 26 or 27 weeks gestation has a gestational age at discharge of 40 weeks, this corresponds to a discharge percentile of 76. This means that 76% of surviving infants in the Network Database born at 26 or 27 weeks gestation, are discharged at or prior to 40 weeks. Note that as gestational age at birth decreases, the cumulative Network curves are shifted further to the right. The right-most curve represents infants <26 weeks at birth; the left-most curve represents infants >29 weeks at

birth. Your center may not have infants in every category. Data from Table 8.7 can be used to identify specific infants plotted on this figure.

Figure 8.7

Gestational Age at Discharge for SGA Infants

Surviving SGA Infants 501-1500 Grams with No Major Birth Defects Born in 2007

Gestational Age at Discharge is calculated based on the infant's Total Hospital Stay. Each surviving infant 501 to 1500 grams who is small for gestational age and whose gestational age at discharge is between 34 and 50 weeks (excluding those with major birth defects or missing length of stay data) is plotted on this figure as a point on a gestational age curve. The curves on which the points are plotted represent the cumulative experience at all Vermont Oxford Network Centers in 2007. Please note that a single point can represent one or more infants at your center within the applicable gestational age category.

Three curves, for three separate gestational age categories, are shown (<30 weeks, 30 weeks, 31-34 weeks). These curves allow you to compare the gestational age at discharge for individual infants at your center with the percentage of all Network infants in that gestational age category who were discharged by that gestational age. For instance, if an SGA infant born at less than 30 weeks gestation has a gestational age at discharge of 40 weeks that corresponds to a discharge percentile of 56. This means that 56% of surviving SGA infants in the Network Database born at less than 30 weeks gestation are discharged at or prior to 40 weeks. Note that as gestational age at birth decreases, the cumulative Network curves are shifted further to the right. The right-most curve represents infants less than 30 weeks at birth; the left-most curve represents infants 31-34 weeks at birth. Your center may not have infants in every category. Data from Table 8.7 can be used to identify specific infants plotted on this figure.

Table 8.7

Infant List: Initial Length of Stay and Total Hospital Stay Infants 501-1500 Grams Born in 2007

List of infants at your center ordered by Patient ID Number including Birth Weight, Gestational Age in completed weeks, Birth Location, Day of Admission (if outborn), Birth Defect Severity (None, Moderately Severe, Severe, Very Severe, Most Severe), Any Major Surgery (Yes, No or Not Applicable), Initial Disposition status from your center (Home, Died, Transfer, Unknown), Survival Status (Died, Alive, Unknown), Days Before Admit, Stay During 1st Admit, Days After Admit, Observed Total Hospital Stay in Days.

Table 8.8

Infant List: Observed and Predicted Total Hospital Stay Surviving Infants 501-1500 Grams Born in 2007

List of infants at your center who survived, showing the observed and predicted Total Hospital Stay, in order of Patient ID. The list includes: Patient ID, Birth Weight, Gestational Age in completed weeks, Birth Location, Small for GA, Observed Total Hospital Stay (Days), Predicted Total Hospital Stay (Days), and the 90% upper bound of Predicted Total Hospital Stay. Total Hospital Stay in days includes the Initial Length of Stay, as well as additional days at subsequent hospitals if the infant was transferred. The predicted total hospital stay for each infant is calculated using the multivariable

regression model described above for Figure 8.4. Missing values for predictor variables have been imputed when necessary. Cases with imputed values are identified by an asterisk. Infants for whom the observed total hospital stay exceeds the upper 90% confidence limit for the predicted value are identified by two asterisks so that these specific cases can be reviewed if desired.

Table 8.9

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

Surviving Infants 501-1500 Grams Born in 2007

List of surviving infants with birth weights between 501 and 1500 grams 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 in completed weeks, Birth Location, Day of Admission (for outborn infants), Birth Defect, Any Major Surgery, Initial Disposition, Initial Length of Stay, and Total Hospital Stay.

Table 8.10

Infant List: Still Hospitalized as of First Birthday

Infants 501-1500 Grams Born in 2007

List of infants with birth weights between 501 and 1500 grams at your center who were still hospitalized at one year of age.

Table 8.11

Infant List: Unknown Total Hospital Stay

Infants 501-1500 Grams Born in 2007

List of infants with birth weights between 501 and 1500 grams at your center who had unknown Total Hospital Stay.

Section 9:

Ten-Year Trends

Infants 501-1500 Grams Born 1998 to 2007

Section 9

Ten-Year Trends

Infants 501-1500 Grams Born 1998 to 2007

Figures 9.1 to 9.27 show outcomes and interventions for the 10-year period 1998 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 1998 will have 10 years of data; those which joined later will have fewer years of data.

Figure 9.1

Prenatal Care, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams.

Figure 9.2

Inborn Births, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams.

Figure 9.3

C-Section, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams.

Figure 9.4

Antenatal Steroids, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams.

Figure 9.5

Respiratory Distress Syndrome, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 9.6

Surfactant at Any Time, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams.

Figure 9.7

Conventional Ventilation, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 9.8

High Frequency Ventilation, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 9.9

Pneumothorax, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 9.10

Steroids for Chronic Lung Disease, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 9.11

Patent Ductus Arteriosus, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 9.12

Indomethacin, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 9.13

PDA Ligation, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 9.14

Necrotizing Enterocolitis, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 9.15

Late Bacterial Infection, Infants 501-1500 Grams, Born 1998 to 2007

Late Bacterial Infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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 9.16

Coagulase Negative Staph Infection, Infants 501-1500 Grams, Born 1998 to 2007

Coagulase Negative Staph Infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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 9.17

Nosocomial Infection, Infants 501-1500 Grams, Born 1998 to 2007

Late Bacterial and/or Coagulase Negative Staph Infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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 9.18

Fungal Infection, Infants 501-1500 Grams, Born 1998 to 2007

Fungal Infection after Day 3 of life. This measure is applicable to infants with birth weights between 501 and 1500 grams 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 9.19

Cranial Ultrasound Exams, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 9.20

Intraventricular Hemorrhage, Infants 501-1500 Grams, Born 1998 to 2007

IVH grades 1 to 4. This measure applies to infants with birth weights between 501 and 1500 grams who received a cranial ultrasound on or before day 28 of life.

Figure 9.21

Severe Intraventricular Hemorrhage, Infants 501-1500 Grams, Born 1998 to 2007

IVH grades 3 or 4. This measure applies to infants with birth weights between 501 and 1500 grams who received a cranial ultrasound on or before day 28 of life.

Figure 9.22

Eye Exams, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 9.23

Retinopathy of Prematurity, Infants 501-1500 Grams, Born 1998 to 2007

ROP stages 1 to 4. This measure applies to infants with birth weights between 501 and 1500 grams who received a retinal exam.

Figure 9.24

Severe Retinopathy of Prematurity, Infants 501-1500 Grams, Born 1998 to 2007

ROP stages 3 or 4. This measure applies to all infants with birth weights between 501 and 1500 grams who received a retinal exam.

Figure 9.25

Chronic Lung Disease, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams who meet the conditions defined in the CLD algorithm described in Section 1, Table 1.2.

Figure 9.26

Any Major Surgery, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams, except infants who died in the delivery room/initial resuscitation area.

Figure 9.27

Mortality, Infants 501-1500 Grams, Born 1998 to 2007

This measure applies to infants with birth weights between 501 and 1500 grams.

Section 10

Characteristics, Initial Resuscitation, and Disposition Status

Infants under 501 Grams Born in 2007

Section 10

Characteristics, Initial Resuscitation, and Disposition Status Infants under 501 Grams Born in 2007

This section presents data for infants with birth weights under 501 grams who were born in 2007. The three columns in Tables 10.1 to 10.3 show the number of infants at your center and the number and percent of infants at all network centers for which the measures are true. The total number of infants for your center and the Network are shown in the column headings. Table 10.4 is a list of infants with birth weights less than 501 grams.

Table 10.1

Infant Characteristics, Infants under 501 Grams Born in 2007

Characteristics of infants at birth for infants with birth weights under 501 grams, including birth location categories (inborn, outborn and if outborn, whether the infant was admitted on or before day 3 or after day 3), Male Gender, Maternal Race, Prenatal Care, Antenatal Steroids, Mode of Delivery (C-Section), Multiple Gestation, number of infants delivered if multiple gestation (Plurality: Singleton, Twins, Triplets, >3 Births), major birth defect (Congenital Malformation) and Small for Gestational Age (SGA), Temperature < 36.5°C.

Table 10.2

Initial Resuscitation and Delivery Room Deaths, Infants under 501 Grams Born in 2007

Interventions in the delivery room/initial resuscitation area for infants with birth weights under 501 grams, including Oxygen, Bag/Mask, Endotracheal Tube Ventilation (ETT Ventilation), Cardiac Compression (Chest Compression), Epinephrine, Surfactant in the delivery room and None.

Table 10.3

Discharge and Transfer Status, Infants under 501 Grams Born in 2007

For all infants with birth weights under 501 grams, status at Initial Disposition, Survival Status, Status of Transfers and Reason for Transfer. Infants who are still hospitalized as of first birthday have a Final Disposition Status of "Alive" and are elsewhere included in the "Home" category.

Table 10.4

Infant List: Infants under 501 Grams Born in 2007

List of all infants in your center with birth weights under 501 grams, including Patient ID, Birth Weight (grams), Gestational Age in weeks (GA Weeks) and days (GA Days), Birth Location (Inborn, Outborn), Day of Admission for outborn infants, Survival Status (Died, Alive, Unknown), and Life Support (Yes, No). Survival status is based on the final discharge status or first birthday, whichever occurs first. Infants still hospitalized as of their first birthday are considered to be alive. Life support is coded "Yes" for infants who were intubated in the delivery room or received assisted ventilation. Life support is coded "No" for infants who were not intubated in the delivery room and who did not receive either conventional or high frequency ventilation.

Section 11

Characteristics, Interventions, and Outcomes

Infants 22-29 Weeks Gestational Age Born in 2007

Section 11

Characteristics, Interventions, and Outcomes

Infants 22-29 Weeks Gestational Age Born in 2007

The tables and figures in this section show the number of admissions and infant characteristics, interventions and outcomes by gestational age category for infants 22 to 29 weeks completed gestational age, regardless of birth weight.

Table 11.1 shows the number of infants for whom the various measures in Section 11 are applicable, by week of gestational age (22 weeks to 29 weeks inclusive). **Tables 11.2 to 11.17** report the observed value at your center for the indicated characteristics, interventions and outcomes and the first and third Network quartile values (25th and 75th percentiles) of all network 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 11.1

Number of Infants for Categories of Measures by Gestational Age

Infants 22-29 Weeks Gestation Born in 2007

For the categories of measures included in this section, the number of infants at your center with gestational ages between 22 and 29 weeks who were born in 2007, by gestational age category and overall. For the CLD measures (All and Infants < 33 Weeks GA), the numbers are based on the algorithm described in the introduction to Table 1.2 in Section 1.

Table 11.2

Infant Characteristics by Gestational Age

Infants 22-29 Weeks Gestation Born in 2007

Characteristics of infants with gestational ages between 22 and 29 weeks who were born in 2007, by gestational age and overall. The percent of infants at your center and quartile values for all centers in the Network 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 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 infants with gestational age between 22 and 29 weeks (Total Infants, Table 11.1).

Table 11.3

Initial Resuscitation by Gestational Age

Infants 22-29 Weeks Gestation Born in 2007

Initial resuscitation for infants with gestational ages between 22 and 29 weeks who were born in 2007, by gestational age and overall. The percent of infants at your center and Network quartile values are shown for each of the measures. The measures in this table are applicable to all infants with gestational ages between 22 and 29 weeks (Total Infants, Table 11.1).

Table 11.4
Respiratory Outcomes and Interventions by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

Respiratory outcomes and interventions for infants with gestational ages between 22 and 29 weeks who were born in 2007, by gestational age and overall. The percent of infants at your center and Network quartile values are shown for each of the measures. Other than the exceptions listed below, measures in this table are applicable to all infants in the gestational age range, except those infants who die in the delivery room/initial resuscitation areas.

The Early CPAP measure is restricted to infants who received 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 received Early CPAP and indicates whether the infant received ETT ventilation after first receiving CPAP. The Surfactant after 2 Hours measure is restricted to infants who received surfactant.

The Oxygen at 28 Days and Oxygen at 36 Weeks measures only apply 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 measures for CLD at 36 weeks (CLD 36) and CLD at 36 Weeks for infants with gestational age less than 33 weeks (CLD 36 < 33) are based on the algorithm for chronic lung disease described in the introduction to Table 1.2 in Section 1.

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

Table 11.5
Other Outcomes and Interventions by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

Other outcomes and interventions for infants with gestational ages between 22 and 29 weeks who were born in 2007, by gestational age and overall. The percent of infants at your center and Network quartile values are shown for each of the measures.

The percent of infants with late infection measures is limited to infants hospitalized after Day 3 of life. For infants who received a Cranial Ultrasound, the Any IVH measure is the percent of infants who had grades 1 to 4 Periventricular-Intraventricular Hemorrhage (PIH); Severe IVH reports the percent who had grades 3 or 4 PIH. Any ROP shows the percent of infants who had stage 1 to 4 retinopathy of prematurity among infants who had a retinal exam performed; Severe ROP shows the percent who had stage 3 or 4 ROP.

Table 11.6
Surgery by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

Surgical procedures for infants with gestational ages between 22 and 29 weeks who were born in 2007, by gestational age and overall. The percent of infants at your center and Network quartile values are shown for each of the measures: PDA Ligation, NEC Surgery, ROP Surgery, Major Surgery by Category, and Any Major Surgery. Procedures not included in major surgery are also listed. Surgery measures apply to all infants except those who died in the delivery room/initial resuscitation area.

Table 11.7
Enteral Feeding
by Gestational Age and Discharge Status
Infants 22-29 Weeks Gestation Born in 2007

Enteral Feeding at Discharge (Home, Transfer, Died, All) by gestational age category for infants with gestational age between 22 and 29 weeks who were born in 2007. The percent of infants at your center and Network quartile values 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.

Table 11.8
Average Weight in Grams
by Gestational Age and Initial Disposition Status
Infants 22-29 Weeks Gestation Born in 2007

Average weight in grams at initial disposition (Home, Transfer, Died, All) for infants with gestational ages between 22 and 29 weeks who were born in 2007, by gestational age and overall. The values at your center and Network quartile values are shown. Infants still hospitalized as of first birthday are included in the "Home" category. These measures apply to all infants for whom Initial Disposition is known. Infants who died in the delivery room/initial resuscitation area are excluded.

Table 11.9
Percent of Infants Receiving AAP Exam at Recommended Age
Infants 22-29 Weeks Gestation Born in 2007

Recommendations for retinal exam screening for Retinopathy of Prematurity are published in the American Association of Pediatrics policy statement (AAP Policy Statement, "Screening Examination of Premature Infants for Retinopathy of Prematurity," *Pediatrics*, Vol. 117, No. 2, Feb 2006, 572-576, and Erratum, *Pediatrics*, Vol. 117, No. 4, Apr 2006, 1468.).

This table shows the percent of infants at your center who were born in 2007 at 22 to 29 weeks gestation, regardless of birth weight, and who were in your center at the recommended age for retinal exam. The table also shows how many of those infants actually received the exam. However, please note that, for infants who received the exam, the data do not distinguish whether the exams took place early, on time, or late.

Table 11.10

**Infant List: Retinopathy of Prematurity Screening Status
Infants 22-29 Weeks Gestation Born in 2007**

Retinopathy of Prematurity screening status is presented for infants at your center who were born in 2007 at 22 to 29 weeks gestation, regardless of birth weight, in order of Patient ID number.

The table includes the chronological age recommended for eye exam by the AAP in completed weeks (see reference in above description of Table 11.9), the chronological age of the infant at discharge in completed weeks, whether the infant was in your hospital at the AAP-recommended age, and whether the infant actually had an eye exam prior to discharge. Age at discharge represents the number of completed weeks from birth to Initial Disposition or, if the infant was readmitted to your center following transfer to another hospital, the number of weeks from birth until Disposition after Readmission.

Please note that, for infants who received the exam, the data do not distinguish whether the exams took place early, on time, or late.

Table 11.11

**Growth Measures, Birth to Initial Disposition
Infants 22-29 Weeks Gestation Born in 2007**

Growth measures are presented for infants at your center with no major birth defect who were born in 2007 at 22 to 29 weeks gestation, regardless of birth weight. The number and mean of infants at your center and in all Network centers, as well as quartile values for all centers in the Network, are shown for each measure.

Only infants discharged home or transferred and who were between 15 and 159 days to initial disposition are included in this table. Reporting is restricted to this subset of infants to limit results to a population consistent with previous research by Patel¹.

Head Growth (HG) in cm per week is defined as 7 times the head circumference at discharge, minus head circumference at birth, divided by days from birth to Initial Disposition.

$$HG = \frac{7 \times (\text{Discharge HC} - \text{Birth HC})}{\text{Days to Initial Disposition}}$$

The formula for Growth Velocity (GV) in grams per kilogram per day is taken from the Patel article and is defined as 1000 times the natural log of weight at Initial Disposition divided by birth weight, divided by days from birth to initial disposition. The formula for

growth velocity is used with permission of the Rush University Medical Center, all rights reserved.

$$GV = \frac{1000 \times \ln(\text{Discharge Wt}/\text{Birth Wt})}{\text{Days to Initial Disposition}}$$

¹ Patel AL, et al, "Accuracy Methods for Calculating Postnatal Growth Velocity for Extremely Low Birth Weight Infants," *Pediatrics*, 2005; 116; 1466-1473.

Table 11.12

Infant List: Growth Velocity and Head Growth at Initial Disposition Infants 22-29 Weeks Gestation Born in 2007

Growth measures are presented for infants at your center with no major birth defect who were born in 2007 at 22 to 29 weeks gestation, regardless of birth weight. Only infants discharged home or transferred and who were between 15 and 159 days to initial disposition are included in this table. Infants are presented in order of Patient ID number.

For growth measures presented in this table, see the definitions in Table 11.11 above. The formula for Growth Velocity is used with permission of Rush University Medical Center, all rights reserved.

In addition to reporting growth measure values, values of the Head Circumference at Initial Disposition and Weight at Initial Disposition values are asterisked if they fall below third and tenth percentile values for the gestational age, as reported by Tanis Fenton¹. Values are given two asterisks if below the 3rd Fenton percentile and a single asterisk if below the 10th percentile value.

¹ Fenton TR, "A New Growth Chart for Preterm Babies: Babson and Benda's Chart Updated with Recent Data and a New Format," *BMC Pediatrics*, 2003; 3:13; 1-10 – <http://www.biomedcentral.com/1471-2431/3/13>.

Table 11.13

Median Time to First Dose of Surfactant by Gestational Age Infants 22-29 Weeks Gestation Born in 2007

Median Time to First Dose of Surfactant for infants with gestational ages between 22 and 29 weeks who were born in 2007, by gestational age. If the values are ordered from lowest to highest, the median is the middle value. The values at your center and Network quartile values are shown. These measures apply to all eligible infants who received surfactant.

Table 11.14

Days in Hospital by Final Disposition, Admission Status, and Gestational Age Infants 22-29 Weeks Gestation Born in 2007

Days in hospital for infants with gestational ages between 22 and 29 weeks, by gestational age 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 11.15

**Average Total Hospital Stay by Gestational Age and Final Disposition Status
Infants 22-29 Weeks Gestation Born in 2007**

Average Total Hospital Stay in days for infants with gestational ages between 22 and 29 weeks who were born in 2007, by gestational age and overall. The values at your center and Network quartile values are shown by gestational age and final disposition status (Home, Died, All). Infants still hospitalized as of first birthday are included in the "Home" category.

Table 11.16

**Disposition Status by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

Disposition status measures for infants with gestational ages between 22 and 29 weeks who were born in 2007, by gestational age and overall. The values at your center and Network quartile values are shown by gestational age. Disposition status categories include Initial Disposition (Home, Transfer, Died, Unknown), Post Transfer Disposition for infants who transferred (Home, Transfer, Died, Readmit, Unknown) and Final Disposition Status (Died, Alive, Unknown) for all infants, including infants who transferred from your center to other hospitals. Infants who are still hospitalized as of first birthday have a Final Disposition Status of "Alive" and are elsewhere included in the "Home" category. The Reason for Transfer categories include Growth, Medical/Diagnostic, Surgery, Chronic Care, Other and Unknown for infants who transferred.

Table 11.17

**Survival with No Known Morbidity and Morbidity among Surviving Infants
by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

Survival, survival with no known morbidity and morbidity among surviving infants with gestational ages between 22 and 29 weeks who were born in 2007. The specified morbidity measures are reported by gestational age as a percentage of surviving infants for whom data are available (see Table 11.1). Some hospitals with missing data may not receive information in this table.

Figures 11.1 to 11.30 show summary data for infants with gestational ages between 22 and 29 weeks by gestational age, at your center compared to all network centers. In each of these figures, your center is represented by a large dot, indicating the number of infants or the percentage of the characteristic, intervention or outcome for the labeled birth weight range. The vertical bars in the figures represent the first and third Network quartile values (25th and the 75th percentile values) for all network 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 11.1
Number of Admissions by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

Figure 11.2
C-Section by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

This measure applies to all infants with gestational ages between 22 and 29 weeks.

Figure 11.3
Inborn Births by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

This measure applies to all infants with gestational ages between 22 and 29 weeks.

Figure 11.4
Conventional Ventilation by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

This measure applies to all infants with gestational ages between 22 and 29 weeks, except those who die in the delivery room/initial resuscitation area.

Figure 11.5
High Frequency Ventilation by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

This measure applies to all infants with gestational ages between 22 and 29 weeks, except those who die in the delivery room/initial resuscitation area.

Figure 11.6
High Flow Nasal Cannula by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

This measure applies to all infants with gestational ages between 22 and 29 weeks, except those who die in the delivery room/initial resuscitation area.

Figure 11.7
Nasal IMV or SIMV by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

This measure applies to all infants with gestational ages between 22 and 29 weeks, except those who die in the delivery room/initial resuscitation area.

Figure 11.8
Pneumothorax by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

This measure applies to all infants with gestational ages between 22 and 29 weeks, except those who die in the delivery room/initial resuscitation area.

Figure 11.9
Surfactant at Any Time by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

This measure applies to all infants with gestational ages between 22 and 29 weeks.

Figure 11.10

**First Dose of Surfactant after 2 Hours by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

This measure applies to infants with gestational ages between 22 and 29 weeks who receive surfactant.

Figure 11.11

**Chronic Lung Disease by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

Chronic lung disease (CLD) at 36 weeks corrected gestational age. This measure applies to infants with gestational ages between 22 and 29 weeks who are eligible, based on the algorithm described in the introduction to Section 1, Table 1.2.

Figure 11.12

**Patent Ductus Arteriosus by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

This measure applies to all infants with gestational ages between 22 and 29 weeks, except those who die in the delivery room/initial resuscitation area.

Figure 11.13

**Indomethacin by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

This measure applies to all infants with gestational ages between 22 and 29 weeks, except those who die in the delivery room/initial resuscitation area.

Figure 11.14

**Early Bacterial Infection by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

Early Bacterial Infection on or before Day 3 of life. This measure applies to all infants with gestational ages between 22 and 29 weeks, except those who die in the delivery room/initial resuscitation area.

Figure 11.15

**Late Bacterial Infection by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

Late Bacterial Infection after Day 3 of life. This measure is applicable to infants with gestational ages between 22 and 29 weeks 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 11.16

**Coagulase Negative Staph Infection by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

Coagulase Negative Staph Infection after Day 3 of life. This measure is applicable to infants with gestational ages between 22 and 29 weeks 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 11.17

**Nosocomial Bacterial Infection by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

Late Bacterial and/or Coagulase Negative Staph infection after Day 3 of life. This measure is applicable to infants with gestational ages between 22 and 29 weeks 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 11.18

**Fungal Infection by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

Fungal Infection after Day 3 of life. This measure is applicable to infants with gestational ages between 22 and 29 weeks 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 11.19

**Cranial Ultrasound Exam by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

This measure applies to all infants with gestational ages between 22 and 29 weeks, except those who die in the delivery room/initial resuscitation area.

Figure 11.20

**Intraventricular Hemorrhage by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

Infants with Grades 1 to 4 of periventricular-intraventricular hemorrhage. This measure applies to all infants with gestational ages between 22 and 29 weeks who had a cranial ultrasound on or before day 28 of life.

Figure 11.21

**Severe Intraventricular Hemorrhage by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

Infants with Grades 3 or 4 periventricular-intraventricular hemorrhage. This measure applies to all infants with gestational ages between 22 and 29 weeks who had a cranial ultrasound on or before day 28 of life.

Figure 11.22

**Periventricular Leukomalacia by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

This measure applies to all infants with gestational ages between 22 and 29 weeks who had a cranial ultrasound exam.

Figure 11.23

**Eye Exams by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007**

This measure applies to all infants with gestational ages between 22 and 29 weeks, except those who die in the delivery room/initial resuscitation area.

Figure 11.24
Retinopathy of Prematurity by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

Infants with Stages 1 to 4 ROP. This measure applies to all infants with gestational ages between 22 and 29 weeks who had a retinal exam.

Figure 11.25
Severe Retinopathy of Prematurity by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

Infants with Stages 3 or 4 ROP. This measure applies to all infants with gestational ages between 22 and 29 weeks who had a retinal exam.

Figure 11.26
Any Major Surgery by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

This measure applies to all infants with gestational ages between 22 and 29 weeks, except those who die in the delivery room/initial resuscitation area.

Figure 11.27
Any Breast Milk at Discharge by Gestational Age
Surviving Infants 22-29 Weeks Gestation Born in 2007

This measure applies to all infants with gestational ages between 22 and 29 weeks 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.

Figure 11.28
Median Total Hospital Stay by Gestational Age
Surviving Infants 22-29 Weeks Gestation Born in 2007

Median Total Hospital Stay in days for surviving infants with gestational ages between 22 and 29 weeks by gestational age.

Figure 11.29
Survival with No Known Morbidity by Gestational Age
Infants 22-29 Weeks Gestation Born in 2007

Of all infants with gestational ages between 22 and 29 weeks and known final disposition status, the percentage who survived with no known morbidity or Extreme Length of Stay (LOS). Morbidities considered include Severe Intraventricular Hemorrhage (Severe IVH), one or more of the late infections – Late Bacterial, Coagulase Negative Staph or Fungal (Any Late Infection), Chronic Lung Disease (CLD), Pneumothorax (PNTX), Periventricular Leukomalacia (PVL) and Necrotizing Enterocolitis (NEC). The CLD measure is based on an 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. Extreme LOS is defined as Total Hospital Stay greater than the 90% upper bound for the infant's predicted total stay, based on the risk adjustment model discussed in Section 8, Figure 8.4. Note that infants with extreme length of stay are listed in Section 8, Table 8.8. Infants who survive and have none of the listed morbidities/Extreme LOS are assigned a "Yes" response; infants who die or are

known to have one or more of the listed morbidities are assigned a “No” response. Some hospitals with missing final disposition status may not receive information in this figure.

Figure 11.30

Mortality by Gestational Age

Infants 22-29 Weeks Gestation Born in 2007

Percentage of infants who died at your center and Network quartile values for infants with gestational ages between 22 and 29 weeks and known final disposition status by gestational age.

Section 12

Final Quarterly Report and Data Completeness Report

All VLBW Infants Born in 2007

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

This section provides the Final Quarterly Births Report for 2007 and a table showing the percent of missing values for variables collected by your center in 2007. Both tables apply to all eligible very low birth weight (VLBW) infants born in 2007, including infants with birth weights between 401 and 1500 grams and infants with gestational age between 22 weeks, 0 days, and 29 weeks, 6 days. The tables are intended as an overall summary of the data reported to Vermont Oxford and to help your center monitor efforts to improve the completeness and accuracy of data submissions.

Table 12.1

Final Quarterly Report, All VLBW Infants Born in 2007

The Final Quarterly Report provides data for all VLBW infants who were born in the calendar years 2006 and 2007 and treated at your center, as well as data for all VLBW infants who were born in 2007 and treated at all network 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. Records of infants who were transferred to another network hospital on or before day 28 of life are included with your center's data but are excluded from the data for all network centers to avoid double-counting of infants.

Table 12.2

Data Completeness Report, All VLBW Infants Born in 2007

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

Table 12.2 also reports the number and percent missing for the chronic lung disease variable, which is an estimate of chronic lung disease at 36 weeks based on the algorithm described in the introduction to Section 1, Table 1.2.

Section 13

2007 Membership Survey

Section 13

2007 Membership Survey

This section provides data submitted by your center in the 2007 Membership Survey, if your center completed the survey. Please note that the level of care reported in paragraph XI, Level of Neonatal Care, is based on your hospital's assessment of the guidelines prepared by the Committee on Fetus and Newborn of the American Academy of Pediatrics (Pediatrics, Vol. 114, No. 5, Nov 2005, 1341-1347).

Table 13.1

Hospital Membership Survey for 2007

Responses from your center on the Annual Hospital Membership Survey. The survey includes sections on the following at your center: number of Newborn Beds and Admissions, Obstetrical Service, Clinical Information Systems, Related NICUs, Follow-Up Clinic availability, Staffing, Services provided, Quality Assurance, Hospital Ownership, the Capabilities and Level of Neonatal Care and your center's NICU Type (A, B or C). If your center agreed with its NICU Type category, Section 5 of this report provides a comparison of your center's characteristics, procedures, and outcomes with other centers of the same NICU Type.

The NICU Types are defined as follows:

Type A

Centers which have a restriction on assisted ventilation or which only perform minor surgery for newborn infants.

Type B

Centers with no restriction on assisted ventilation and which perform major surgery for newborn infants, including one or more of the following: omphalocele repair, ventriculo-peritoneal shunt, TEF/esophageal repair, bowel resection/reanastomosis, meningomyelocele repair, cardiac catheterization and PDA ligation.

Type C

Centers with the capabilities of Type B centers and which also perform cardiac surgery requiring bypass for newborn infants.