Complete Summary

TITLE

Prenatal testing: percentage of D (Rh) negative, unsensitized patients who receive anti-D immune globulin at 26-30 weeks gestation.

SOURCE(S)

Physician Consortium for Performance Improvement, Prenatal Testing Work Group. Prenatal testing. Core physician performance measurement set. Chicago (IL): American Medical Association (AMA); 2002. 45 p.

Brief Abstract

DESCRIPTION

This measure assesses the percentage of D (Rh) negative, unsensitized patients who receive anti-D immune globulin at 26-30 weeks gestation.

RATIONALE

Prenatal testing was selected as a condition-specific measurement set because of the prevalence and incidence of pregnancy; neonatal mortality; prevalence of pregnancy-related complications; related health care costs; and the existence of established clinical recommendations for prenatal testing.

The effects of prenatal care are difficult to quantify. However, appropriate care can promote healthier pregnancies by detecting and managing maternal medical conditions that warrant intervention, identifying fetuses at risk for congenital anomalies, prematurity and still birth, and by providing health care advice to patients. Maternal medical risk factors have a major influence on pregnancy complications and infant survival. Some of the more serious conditions necessitate close medical supervision to prevent severe complications (AAP & ACOG, 2002).

The reduction in the incidence of Rh D alloimmunization is a prototype for the effectiveness of preventive medicine. Some controversies remain, however, such as the use of anti-D immune globulin in patients with either threatened abortion or antenatal hemorrhage. Similarly, it may not be cost-effective either to screen all Rh D-negative patients with an indirect Coombs test at 24-28 weeks of gestation or to screen all postpartum patients for excessive feto-maternal hemorrhage. The cost effectiveness of routinely repeating the antibody test has not been studied.

The following recommendations are based on good and consistent scientific evidence (Level A) (AAP & ACOG, 2002; ACOG, 1999):

- The Rh D-negative woman who is not Rh D-alloimmunized should receive anti-D immune globulin:
    - At approximately 28 weeks of gestation, unless the father of the baby is also known to be Rh D-negative
    - Within 72 hours after the delivery of an Rh D-positive infant
    - After a first-trimester pregnancy loss
    - After invasive procedures, such as chorionic villus sampling, amniocentesis, or fetal blood sampling

The following recommendations are based primarily on consensus and expert opinion (Level C):

- Anti-D immune globulin prophylaxis should be considered if the patient has experienced:
    - Threatened abortion
    - Second- or third-trimester antenatal bleeding
    - External cephalic version
    - Abdominal trauma
- Unless the father is known to be D-negative, a repeat D antibody test is recommended for all unsensitized D-negative women at 24-28 weeks gestation, followed by the administration of a full (300 mcg) dose of D immunoglobulin if they are antibody-negative. If a D-(D^u-) positive infant is delivered, the dose should be repeated postpartum, preferably within 72 hours after delivery. Unless the father is known to be D-negative, a full dose of D immunoglobulin is recommended for all unsensitized D-negative women after elective abortion (50 mcg before 13 weeks) and amniocentesis. There is currently insufficient evidence to recommend for or against the routine administration of D immunoglobulin after other obstetric procedures or complications such as chorionic villus sampling, ectopic pregnancy termination, cordocentesis, fetal surgery or manipulation (including external version), antepartum placental hemorrhage, antepartum fetal death, and stillbirth (USPSTF, 1996).

PRIMARY CLINICAL COMPONENT

Prenatal testing; anti-D immune globulin prophylaxis

DENOMINATOR DESCRIPTION

All patients who are D (Rh) negative and unsensitized who gave birth during a 12-month period, seen for continuing prenatal care, excluding patients seen for a consultation only; or delivery of a stillborn after 28 weeks

NUMERATOR DESCRIPTION

The number of patients from the denominator receiving anti-D immune globulin at 26-30 weeks gestation

Evidence Supporting the Measure

PRIMARY MEASURE DOMAIN

Process

SECONDARY MEASURE DOMAIN

Not applicable

EVIDENCE SUPPORTING THE MEASURE

A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences
One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Wide variation in quality for the performance measured

EVIDENCE SUPPORTING NEED FOR THE MEASURE

Golden WE, Wells C. Evaluating prenatal care in Arkansas. J Ark Med Soc 2002 Mar;98(9):296-7. PubMed

State of Use of the Measure

STATE OF USE

Pilot testing

CURRENT USE

Internal quality improvement

Application of Measure in its Current Use

CARE SETTING

Ambulatory Care

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Physicians

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Individual Clinicians

TARGET POPULATION AGE

Unspecified

TARGET POPULATION GENDER

Female (only)

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

Characteristics of the Primary Clinical Component

INCIDENCE/PREVALENCE

Maternal

- More than 6 million women become pregnant annually and give birth to more than 4 million live infants each year. Although the percentage of women who begin prenatal care in the first trimester has risen by 10% in the past decade to 82.8% for 1998, the proportion of mothers with late care or no prenatal care (3.9%) has remained unchanged since 1997.

Infant

- Although the United States (U.S.) infant mortality rate has decreased steadily since 1975 (to 7.2 per 1,000 live births in 1998), the U.S. continues to rank 22nd to 25th in the International Infant Mortality Rate Index, a rate significantly behind that of other major industrialized countries.

EVIDENCE FOR INCIDENCE/PREVALENCE

Maternal mortality--United States, 1982-1996. MMWR Morb Mortal Wkly Rep 1998 Sep 4;47(34):705-7. PubMed

Murphy SL. Deaths: final data for 1998. Natl Vital Stat Rep 2000 Jul 24;48(11):1-105. PubMed

Ventura SJ, Martin JA, Curtin SC, Mathews TJ, Park MM. Births: final data for 1998. Natl Vital Stat Rep 2000 Mar 28;48(3):1-100. PubMed

Ventura SJ, Mosher WD, Curtin SC, Abma JC, Henshaw S. Highlights of trends in pregnancies and pregnancy rates by outcome: estimates for the United States, 1976-96. Natl Vital Stat Rep 1999 Dec 15;47(29):1-9. PubMed

ASSOCIATION WITH VULNERABLE POPULATIONS

Among vulnerable populations (e.g., urban, minority), prenatal care is initiated later and there are fewer prenatal visits than among white women.

EVIDENCE FOR ASSOCIATION WITH VULNERABLE POPULATIONS

Milligan R, Wingrove BK, Richards L, Rodan M, Monroe-Lord L, Jackson V, Hatcher B, Harris C, Henderson C, Johnson AA. Perceptions about prenatal care: views of urban vulnerable groups. BMC Public Health 2002 Nov 6;2(1):25. PubMed

BURDEN OF ILLNESS

Maternal

- The United States (U.S.) maternal mortality ratio in 1998 was 7.1 per 100,000 live births and this ratio has not significantly decreased since 1982.

Infant

- Infants born in multiple births are at greater risk than singletons for prematurity or low birthweight. In 1998, 41.7% of twins and 89.1% of triplets/+ were both preterm and low birthweight compared with 3.8% of singletons.
- The five leading causes of infant mortality in the U.S. are: congenital anomalies, prematurity/low birthweight, sudden infant death syndrome, maternal pregnancy complications, and respiratory distress syndrome.

EVIDENCE FOR BURDEN OF ILLNESS

Maternal mortality--United States, 1982-1996. MMWR Morb Mortal Wkly Rep 1998 Sep 4;47(34):705-7. PubMed

Murphy SL. Deaths: final data for 1998. Natl Vital Stat Rep 2000 Jul 24;48(11):1-105. PubMed

UTILIZATION

Low birthweight babies can require increased hospital and provider resources, including time in a neonatal intensive care unit (NICU). A severely ill newborn may spend several weeks or months in a NICU depending on the complexity of the health problem.

EVIDENCE FOR UTILIZATION

U.S. Preventive Services Task Force. Guide to clinical preventive services: report of the U.S. Preventive Services Task Force. 2nd ed. Baltimore (MD): Williams & Wilkins; 1996. 953 p.

COSTS

Birth defects can cause great human suffering, as well as high medical and nonmedical costs for special education, rehabilitation, and other services. In 1992, the estimated lifetime costs for 18 of the most clinically significant birth defects in the United States were $8 billion.

Analysis of the cost implications of low birthweight babies has revealed that:

- Low birthweight babies can require time in a neonatal intensive care unit (NICU) at a cost ranging from $1,000 to $2,500 per day.
- The lifetime medical costs for one premature baby are conservatively estimated at $500,000.
- Low birthweight accounts for 10% of all health care costs for children.
- Health care, education, and child care from birth to age 15 years for the 3.5 to 4 million infants and children born with low birthweight cost between $5.5 and $6 billion more than for children born at normal birthweight.

EVIDENCE FOR COSTS

U.S. Preventive Services Task Force. Guide to clinical preventive services: report of the U.S. Preventive Services Task Force. 2nd ed. Baltimore (MD): Williams & Wilkins; 1996. 953 p.

Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

Data Collection for the Measure

CASE FINDING

Users of care only

DESCRIPTION OF CASE FINDING

These performance measures are designed for prospective data collection in the office-based practice only. The measurement period may begin with the date of the most recent office visit, regardless of the diagnosis at that visit, and the data collection continues until 12 months are completed.

DENOMINATOR SAMPLING FRAME

Patients associated with provider

DENOMINATOR (INDEX) EVENT

Clinical Condition

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions
All patients who are D (Rh) negative, unsensitized who gave birth during the reporting year

Exclusions
All patients seen for a consultation only or delivery of a stillborn after 28 weeks

NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions
All D (Rh) negative, unsensitized patients who receive anti-D immune globulin at 26-30 weeks gestation

Exclusions
Unspecified

DENOMINATOR TIME WINDOW

Time window follows index event

NUMERATOR TIME WINDOW

Fixed time period

DATA SOURCE

Laboratory data
Medical record

LEVEL OF DETERMINATION OF QUALITY

Individual Case

PRE-EXISTING INSTRUMENT USED

The American College of Obstetricians and Gynecologists' (ACOG) Antepartum Record

Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a higher score

ALLOWANCE FOR PATIENT FACTORS

Unspecified

STANDARD OF COMPARISON

Internal time comparison

Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

A demonstration project to test the validity and reliability of measures, as well as their usefulness to practicing physicians, is under way. The Arkansas Foundation for Medical Care (AFMC) has evaluated these prenatal testing measures.

EVIDENCE FOR RELIABILITY/VALIDITY TESTING

Golden WE, Wells C. Evaluating prenatal care in Arkansas. J Ark Med Soc 2002 Mar;98(9):296-7. PubMed

Identifying Information

ORIGINAL TITLE

Anti-D immune globulin.

MEASURE COLLECTION

The Physician Consortium for Performance Improvement Measurement Sets

MEASURE SET NAME

Physician Consortium for Performance Improvement Clinical Performance Measures: Prenatal Testing

SUBMITTER

American Medical Association on behalf of the Physician Consortium for Performance Improvement

DEVELOPER

Physician Consortium for Performance Improvement

ADAPTATION

Measure was not adapted from another source.

RELEASE DATE

2002 Jan

MEASURE STATUS

This is the current release of the measure.

SOURCE(S)

Physician Consortium for Performance Improvement, Prenatal Testing Work Group. Prenatal testing. Core physician performance measurement set. Chicago (IL): American Medical Association (AMA); 2002. 45 p.

MEASURE AVAILABILITY

The individual measure, "Anti-D Immune Globulin," is published in the "Prenatal Testing Core Physician Performance Measurement Set." A brief summary of this document is available from the American Medical Association (AMA) Division of Clinical Quality Improvement Unit Web site: www.ama-assn.org/go/quality.

For further information, please contact AMA staff by e-mail at cqi@ama-assn.org.

COMPANION DOCUMENTS

The following are available:

- Physician Consortium for Performance Improvement. Introduction to physician performance measurement sets. Tools developed by physicians for physicians. Chicago (IL): American Medical Association (AMA); 2001 Oct. 21 p. This document is available from the American Medical Association (AMA) Clinical Quality Improvement Unit Web site: www.ama-assn.org/go/quality.
- Physician Consortium for Performance Improvement. Principles for performance measurement in health care. A consensus statement. [online]. Chicago (IL): American Medical Association (AMA), Joint Commission on the Accreditation of Healthcare Organizations (JCAHO), National Committee for Quality Assurance (NCQA); [3 p]. This document is available from the AMA Clinical Quality Improvement Unit Web site: www.ama-assn.org/go/quality.
- Physician Consortium for Performance Improvement. Desirable attributes of performance measures. A consensus statement. [online]. American Medical Association (AMA), Joint Commission on Accreditation of Healthcare Organizations (JCAHO), National Committee for Quality Assurance (NCQA); 1999 Apr 19 [cited 2002 Jun 19]. [5 p]. This document is available from the AMA Clinical Quality Improvement Unit Web site: www.ama-assn.org/go/quality.

For further information, please contact AMA staff by e-mail at cqi@ama-assn.org.

NQMC STATUS

This NQMC summary was completed by ECRI on November 25, 2002. The information was verified by the Physician Consortium for Performance Improvement on August 28, 2003.

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Date Modified: 10/25/2004