



## Complete Summary

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### TITLE

Prenatal testing: percentage of patients less than 35 years of age at the time of expected delivery who are offered multiple marker testing for congenital anomalies.

### 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 patients less than 35 years of age as of the estimated time of delivery who were offered the multiple marker testing screening test for congenital anomalies.

### 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).

Following are clinical recommendations derived from clinical practice guidelines for multiple marker testing:

- Women who are less than 35 years of age as of the estimated date of delivery should be offered multiple marker serum screening to assess the risk of trisomy 21, ideally between 16-18 weeks gestation by menstrual dating. In women age 35 or older (as of the estimated delivery date), multiple marker testing cannot be recommended as an equivalent alternative to cytogenetic diagnosis for detection of trisomy 21. Serum screening for neural tube defects

(NTDs) by maternal serum alpha-fetoprotein (MSAFP) testing should also be offered to all pregnant women, ideally between 16 and 18 weeks of gestation (AAP & ACOG, 2002).

- There is general agreement that multiple marker testing should replace MSAFP screening for women under 35 years of age. A maternal age of 35 years or older is a well established indication for diagnostic tests such as chorionic villus sampling (CVS) and amniocentesis. The American College of Medical Genetics endorses the previous statement that CVS or amniocentesis is the recommended test for women of 35 years or older (ACMG, 1999; ACMG, 1999).
- The offering of screening for Down syndrome by serum multiple-marker testing is recommended for all low-risk pregnant women, and as an alternative to amniocentesis and CVS for high risk women. Testing should be completed at 15 to 18 weeks' gestation. This testing should be offered only to women who are seen for prenatal care in locations that have adequate counseling and follow-up services. The offering of screening for neural tube defects by maternal serum alpha-fetoprotein testing (MSAFP) measurement is recommended for all pregnant women who are seen for prenatal care in locations that have adequate counseling and follow-up services available. Screening with MSAFP may be offered as part of multiple-marker screening (USPSTF, 1996).

#### PRIMARY CLINICAL COMPONENT

Prenatal testing; screening for congenital anomalies; multiple marker testing

#### DENOMINATOR DESCRIPTION

All patients 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; and patients who have their first prenatal visit after 19 weeks of gestation

#### NUMERATOR DESCRIPTION

The number of patients from the denominator less than 35 years of age at the time of expected delivery who were offered the multiple marker testing screening test for congenital anomalies

### 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

Patients younger than 35 years of age at the time of expected delivery

#### 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.
- Congenital anomalies (158.7 per 100,000 live births) are the leading cause of death among infants. Each year, about 4,000 U.S. infants are born with spina bifida and anencephalus and more than 1,600 infants are born with Down syndrome.

#### 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

- The five leading causes of infant mortality in the U.S. are: congenital anomalies, prematurity/low birthweight, sudden infant death syndrome, maternal pregnancy complication, 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 gave birth during the reporting year

#### Exclusions

All patients seen for a consultation only or delivery of a stillborn after 28 weeks; and patients who have their first prenatal visit after 19 weeks of gestation

#### NUMERATOR INCLUSIONS/EXCLUSIONS

##### Inclusions

All patients less than 35 years of age at the time of expected delivery whose medical record indicates that the multiple-marker testing screening test for congenital anomalies was offered.

Acceptable forms of documentation indicating that the screening test was offered include the date of when the test was performed or documentation that the test was refused.

##### Exclusions

Unspecified

#### DENOMINATOR TIME WINDOW

Time window follows index event

#### NUMERATOR TIME WINDOW

Episode of care

#### DATA SOURCE

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

Screening for congenital anomalies.

### 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, "Screening for Congenital Anomalies," 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](http://www.ama-assn.org/go/quality).

For further information, please contact AMA staff by e-mail at [cqi@ama-assn.org](mailto: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](http://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](http://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](http://www.ama-assn.org/go/quality).

For further information, please contact AMA staff by e-mail at [cqi@ama-assn.org](mailto: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.

#### COPYRIGHT STATEMENT

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