Validation of Prenatal HIV Testing Status As Reported to the Newborn Screening Program by Birth Facilities in New York State

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BACKGROUND

Background

- Maternal-Pediatric HIV Prevention and Care Program established 1996
  - Goal: reduce perinatal HIV transmission to lowest possible level by
    - Ensuring access to prenatal care for all pregnant women
    - Ensuring counseling and testing of all women in prenatal care
    - Ensuring all HIV positive pregnant women are offered ART
    - Ensuring HIV test information is transferred to anticipated birth facility
    - Conducting expediting testing at delivery for all women/newborns for whom no prenatal results are available
    - Conducting HIV testing on all blood samples submitted through the Newborn Screening Program (NSP)

Background …

- Universal newborn screening for HIV instituted in February 1997
- Newborn Screening specimen submission requires transfer of prenatal HIV testing history via a series of check boxes on the blood specimen card

Background …

VI. (1) HIV Test History at Delivery (Prenatal HIV Test History) - Check *one* from A - D, indicate source of HIV test history information

- **A**. **Tested HIV negative during *this* pregnancy**; check source of information (be sure test date falls within this prenatal period):
  - Hard copy of laboratory report in the record, **or**
  - Written note, signed by a clinician, indicating the date of HIV testing and the test result, **or**
  - Computer/electronic record indicating the date of HIV testing and the test result.

- **B. Tested HIV positive during or prior to this pregnancy**. Check source of information:
  - Hard copy of laboratory report in the record, **or**
  - Written note, signed by a clinician, indicating the date of HIV testing and the test result, **or**
  - Computer/electronic record indicating the date of HIV testing and the test result.

- **C. Not tested during this pregnancy**
- **D. Test history unknown/not documented**

(2) In-Hospital Testing-Expedited HIV Testing Status - Check one from E - G; document in the appropriate medical record.

- **E**. Mother tested with consent
- **F**. Newborn tested
- **G.** Testing not needed (Mother tested negative during this pregnancy or is HIV positive)

Background …

NEWBORN SCREENING BLOOD COLLECTION FORM
DO NOT USE AFTER NOVEMBER 2004

29860546
Lab I.D. 129860546

DOH USE ONLY - - DO NOT WRITE IN SHADED AREA

Infant's Last Name

First Initial

1 ☐ Male
2 ☐ Female

☐ Single Birth
☐ Twin A or B
☐ Other _____

Ethnicity/Race
1 ☐ Wht. 4 ☐ Asian
2 ☐ Blk. 5 ☐ Other
3 ☐ Hisp. 6 ☐ Native Amer.

HIV TESTING
PRIOR MATERIAL
A B C D
In-hospital
E F G

Date of Birth
Mo. Day Yr.

Birth Weight
Grams

Date of Specimen
Mo. Day Yr.

Specimen Collected:
1 ☐ Less than 24 hrs. of age
2 ☐ More than 24 hrs. of age

Infant's Medical Record No.

☐ Premature
☐ Transfused: _____ Date

Maternal HBs Ag Test Result
1 ☐ Pos.
2 ☐ Neg. 3 ☐ Unk.

Mother's Social Security No.

Mother's Age

Hospital PFI Code

Hospital of Birth?
1 ☐ Yes 2 ☐ No
☐ Homebirth

1 ☐ Initial Specimen
2 ☐ Repeat Specimen

Physician License No.

Mother's Name: Last First

Hospital Name:

City:

DO NOT USE ADDRESSOGRAPH

Infant's Primary Care Physician

Address:

Zip:

Tel. ( )

Address: Apt. #

Zip:

Tel. ( )

County of Residence

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SEE REVERSE SIDE FOR INSTRUCTIONS

129860546

SATURATE ALL CIRCLES COMPLETELY

Background …

- Site specific reports are generated and supplied to facilities
- Technical assistance is provided to sites on an as needed basis

Background …

- In 2003 birth facilities reported that 94% of women who resided and delivered in NYS had received prenatal HIV testing

Background …

- Validation Study:
  - Goal:

    to determine the usefulness of hospital reports as a method of determining statewide HIV prenatal testing rates by validating the accuracy of the prenatal HIV testing data provided to the Newborn Screening Program

METHODS

Methods

- We reviewed the labor and delivery medical charts of a random sample of deliveries for written documentation of prenatal HIV testing

- A random sample of 600 births from April - September 2003 was chosen from the 127,040 deliveries for which a specimen was submitted for newborn screening

Methods …

- The Kappa statistic was used to assess the ability of newborn screening data to predict documentation of prenatal screening for various demographic variables

Methods …

Sample

600 deliveries
were selected by simple random sample

557 labor and delivery records
were located and reviewed

542 records provided necessary information
for evaluation (90.3%)

RESULTS

Results

- 90.6% of deliveries had documentation of prenatal HIV testing
- No statistical differences found by race/ethnicity, age, region of residence or hospital size

Results …

Summary of Agreement Between Newborn Screening Record and Chart Review Documentation
All Records

Newborn Screening Program Record	**Chart Review Documentation**		**Total**
	Prenatal Test Received	No Prenatal Test / No Documentation	
Prenatal Test Received	483	**27**	**510**
No Prenatal Test / No Documentation	8	24	**32**
Total	**491**	**51**	**542**

Sensitivity = 98.4 PPV = 94.7
Specificity = 47.1 Kappa = .55

Results …

Summary of Agreement Between Newborn Screening Record and Chart Review Documentation
Hospital Size ≥ 2,500 births/year

Newborn Screening Program Record	**Chart Review Documentation**		**Total**
	Prenatal Test Received	No Prenatal Test / No Documentation	
Prenatal Test Received	239	**10**	**249**
No Prenatal Test / No Documentation	5	15	**20**
Total	**244**	**25**	**269**

Sensitivity = 98.0 PPV = 96.0
Specificity = 60.0 Kappa = .64
% of records that had documentation of prenatal testing = 90.7

Results …

Summary of Agreement Between Newborn Screening Record and Chart Review Documentation
Hospital Size < 2,500 births/year

Newborn Screening Program Record	**Chart Review Documentation**		**Total**
	Prenatal Test Received	No Prenatal Test / No Documentation	
Prenatal Test Received	244	**17**	**261**
No Prenatal Test / No Documentation	3	9	**12**
Total	**247**	**26**	**273**

Sensitivity = 98.8 PPV = 93.5
Specificity = 34.6 Kappa = .44
% of records that had <u>documentation</u> of prenatal testing = 90.5

Comments

Comments

- A high percentage of women who reside in NY and deliver in NYS facilities receive voluntary prenatal HIV testing

- Nearly 91% of births reviewed had **documentation** of prenatal testing in the Labor/Delivery record

Comments …

- Agreement between what was reported to NSP and what was found to be documented in the labor/delivery record varied:
  - overall 93.5% of records reviewed had agreement (kappa=0.55)
  - smaller facilities more likely to lack record documentation and NSP agreement– especially smaller facilities in NYC (kappa=0.25)
  - larger facilities more likely to have record documentation and NSP agreement– especially outside of NYC (kappa=0.70)

Comments …

- Limitations:
  - 58 (9.7%) of sampled records not reviewed
    - 27 of these records were from 7 facilities that failed to provide the information from any of the sampled records from their site
    - If all chart review agreed with NSP record –
      - Prenatal testing = 91% (kappa=0.58)
    - If all chart review disagreed with NSP record –
      - Prenatal testing = 82% (kappa=0.28)
    - Previous investigations at the large sites has shown prenatal testing rates in the range of 90%

Comments …

- Hospital self-report through the Newborn Screening Program, with DOH monitoring and feedback to facilities, is a useful and accurate method for gathering population-based data on voluntary prenatal testing