First Trimester Interlaboratory Comparison Program (ICP)
Sponsored by Women & Infants Hospital of Rhode Island

INSTRUCTIONS

The clinical history for sample **FT-08** includes CRL and NT measurements in mm for an individual sonographer (initials **GNG**). ICP participants were emailed an Excel file that included a series of NT measurements from sonographer GNG (in the same spreadsheet that included measurements for other sonographers) and a worksheet for calculating a median equation in the previous distribution (FT-B 2010). All participants that reported a NT MoM that was consistent with expectation. Compute the NT MoM by treating it as though it were a clinical sample and transcribe the value to the data form. NT MoM and clinical histories are provided for samples FT-02 to FT-05 in the original format.

You should receive by two files by email

<ICP NT analyzer-Master.xls> and <ICP NT analyzer documentation-MASTER. doc>

Specimen type Laboratories that use free beta hCG rather than hCG in their risk algorithm have been sent a separate set of samples (some will receive both sets). Results should be entered in the appropriate boxes on the data form. Also, select the appropriate free beta method code on page 3.

Confidentiality

Although ICP program personnel may have knowledge of an individual laboratory's performance, such information will remain confidential. The de-identified data will be reported to other participants in a listing of results, along with summary information. Thus, the survey is considered confidential, but not anonymous.

Testing and submitting your results

1. Samples have been frozen before shipment and should be thoroughly mixed by several inversions before assay. Store sample in refrigerator until removed for assay.
2. Ensure that your FT-ICP Laboratory Code is present on the top of each data sheet.
3. Fax pages 3 to 9 to the number provided on the bottom.
4. In any communications, please include your laboratory code.

Special computations

Gestational ages should be reported as decimal weeks (in this distribution, just enter the provided gestational age). If you use weeks and days, use the following table to convert to decimal weeks, if needed.

1 day = 0.1	3 days = 0.4	5 days = 0.7
2 days = 0.3	4 days = 0.6	6 days = 0.9

Participants are provided with a gestational age (in decimal weeks) and an NT MoM. Your software may require an NT measurement and a CRL in mm to be entered directly. If this is the case, you may need to repeatedly 'guess' NT and CRL measurements until your software produces the NT MoM and gestational age provided in the clinical histories. If you have difficulty, use the contact information provided below.

Biohazard warning

All FT-ICP samples should be treated as potentially infectious and should be handled as if they are capable of transmitting disease. Some survey samples are real patient serum pools that have been tested and found negative for infectious diseases (Hep B surface antigen, Hep C antibody and HIV Ag/AB combination). Precautions described in CDC and FDA recommendations, and OSHA blood borne pathogen rules should be followed at all times when handling FT-ICP samples.

Replacement samples: If you require replacement or additional samples, call (401) 453-7650 and request to speak with Beth Eklund. Direct comments to Dr. George Knight (gknight@ipmms.org) or Glenn Palomaki (gpalomaki@ipmms.org). V(207) 894-6610, F(207) 642-2586.

Clinical Histories

All women are assumed to be non-Hispanic Caucasian and non-diabetic with a singleton pregnancy. Additional information relating to each specimen can be found in the following table. Dates are in the form MM/DD/YY.

ID	DOB	Wgt (lbs)	Draw Date	Sono Code	CRL (mm)	NT (mm)	NT (MoM)	GA (decimal)
FT-01	10/04/71	125	03/14/11	GNG	56	1.3		
FT-02	02/20/77	195	03/14/11				1.9	11.7
FT-03	01/02/76	105	03/14/11				1.3	13.6
FT-04	01/15/82	181	03/14/11				1.4	11.7
FT-05	02/05/78	121	03/14/11				1.1	13.9

If needed, the approximate CRLs and GA in weeks and days for FT-02 to FT-05 samples are:

	FT-01	FT-12	FT-13	FT-14	FT-15
CRL(mm)		50	73	49	77
Weeks		11	13	11	13
Days		5	4	5	6

Method codes for pregnancy associated plasma protein-A (PAPP-A)

Code	Description	Code	Description
Be-01	Beckman Access/Access 2	Pe-02	Perkin Elmer Victor
Be-02	Beckman DxI	Dp-02	Siemens Immulite 2000 (formerly DPC)
Di-01	Beckman ELISA (formerly DSL)	Ot-00	Other, specify
Pe-01	Perkin Elmer AutoDELFIA		

Method codes for human chorionic gonadotropin (hCG)

Code	Description	Code	Description
Ba-02	Bayer ADVIA Centaur	Di-01	Beckman ELISA (formerly DSL)
Ba-05	Bayer ADVIA CP	Dp-02	Siemens Immulite 2000 (formally DPC)
Be-01	Beckman Access / Access 2	Pe-01	Perkin Elmer DELFIA
Be-02	Beckman DxI	Ot-00	Other, specify

Method codes for free beta hCG (hCGfb)

Code	Description	Code	Description
Pe-01	Perkin Elmer Auto DELFIA	Ot-00	Other, specify
Pe-02	Perkin Elmer Victor		

Method codes for dimeric inhibin A (DIA)

Code	Description	Code	Description
Di-01	Beckman ELISA (formerly DSL)	Be-02	Beckman DxI
Be-01	Beckman Access / Access 2	Ot-00	Other, specify

First Trimester ICP Laboratory Profile

Instructions: This page should be completed at initial enrollment, in the first distribution of each year (FT-A), and amended whenever a change is made in any of the items (*e.g.,* a method change, a new set of parameters, or different interpretive software).

1. PAPP-A method code: _____ (codes on previous page)

2a. hCG method code: _____ (codes on previous page)

or

2b. free beta hCG (hCGfb) method code: _____ (codes on previous page)

3. Inhibin-A method code: _____ (codes on previous page)

4. Trimester of reported risk:
- ○ First
- ○ Second
- ○ Term
- ○ Unknown

5. NT medians are:
- ○ Based on a single set (source:_____)
- ○ Center-specific
- ○ Sonographer-specific
- ○ Combination of the above
- ○ Unknown

6. Interpretative Software:
- ○ LMS **α**lpha
- ○ Benetech PRA
- ○ Maciel Prenatal Interpretive Software
- ○ In-house
- ○ Other (specify:_____)

7. Down syndrome cut-off: 1: ☐☐☐☐☐☐

8. Maternal age-associated risk. Fill in the following table with the age-associated Down syndrome risk. We will assume the trimester of risk is the same as reported above (**Q 4**).

Maternal Age	DS Risk (1:n)
20.5	
25.5	
30.5	
35.5	
40.5	
45.5	

9. Age-associated risk from:
- ○ Cuckle *et al.,* Br J Obstet Gynaecol. 1987;94:387-402.
- ○ Hecht & Hook, Am J Med Genet. 1996;62:376-85.
- ○ Morris *et al.,* Prenat Diagn. 2003;23:252-8
- ○ Other (specify_____)
- ○ Unknown

10. Other biochemical marker(s) you would like included in the FT survey_____

First Trimester ICP: FT-A 2011 **Lab no:_____**

Date samples received:_____ **Date samples tested:_____**

Specimen FT-01 (or FT-01 fb)

Patient data

Gestational Age: Decimal □□.□ Integer □□

Maternal Age: Decimal □□.□ Integer □□

NT MoM □.□□

Assay and interpretive results

PAPP-A (circle units): mIU/mL or ng/mL □□□□.□ MoM □.□□

hCG: IU/mL □□□.□ MoM □.□□

hCGfb (circle units): ng/mL, mIU/mL □□□.□ MoM □.□□

Down syndrome risk, interpretation and action

Down syndrome risk: **1:** □□□□□□

□ if < than □ if > than

Interpretation:
- ○ screen negative
- ○ screen positive
- ○ uninterpretable
- ○ unknown/other

Action:
- ○ no further action
- ○ US/counsel for amnio/CVS
- ○ collect new sample & retest
- ○ decision made by physician
- ○ unknown/other

Specimen FT-02 (or FT-02fb)

Patient data

Gestational Age: Decimal □□.□ Integer □□

Maternal Age: Decimal □□.□ Integer □□

NT MoM □.□□

Assay and interpretive results

PAPP-A (circle units): mIU/mL or ng/mL □□□□.□ MoM □.□□

hCG: IU/mL □□□.□ MoM □.□□

hCGfb (circle units): ng/mL, mIU/mL □□□.□ MoM □.□□

Down syndrome risk, interpretation and action

Down syndrome risk: **1:** □□□□□□

□ if < than □ if > than

Interpretation:
- ○ screen negative
- ○ screen positive
- ○ uninterpretable
- ○ unknown/other

Action:
- ○ no further action
- ○ US/counsel for amnio/CVS
- ○ collect new sample & retest
- ○ decision made by physician
- ○ unknown/other

First Trimester ICP: FT-A 2011 **Lab no:_____**

Specimen FT-03 (or FT-03fb)

Patient data

Gestational Age: Decimal ☐☐.☐ Integer ☐☐

Maternal Age: Decimal ☐☐.☐ Integer ☐☐

NT MoM ☐.☐☐

Assay and interpretive results

PAPP-A (circle units): mIU/mL or ng/mL ☐☐☐☐.☐ MoM ☐.☐☐

hCG: IU/mL ☐☐☐.☐ MoM ☐.☐☐

hCGfb (circle units): ng/mL, mIU/mL ☐☐☐.☐ MoM ☐.☐☐

Down syndrome risk, interpretation and action

Down syndrome risk: **1:** ☐☐☐☐☐☐

☐ if < than ☐ if > than

Interpretation:
- ○ screen negative
- ○ screen positive
- ○ uninterpretable
- ○ unknown/other

Action:
- ○ no further action
- ○ US/counsel for amnio/CVS
- ○ collect new sample & retest
- ○ decision made by physician
- ○ unknown/other

Specimen FT-04 (or FT-04fb)

Patient data

Gestational Age: Decimal ☐☐.☐ Integer ☐☐

Maternal Age: Decimal ☐☐.☐ Integer ☐☐

NT MoM ☐.☐☐

Assay and interpretive results

PAPP-A (circle units): mIU/mL or ng/mL ☐☐☐☐.☐ MoM ☐.☐☐

hCG: IU/mL ☐☐☐.☐ MoM ☐.☐☐

hCGfb (circle units): ng/mL, mIU/mL ☐☐☐.☐ MoM ☐.☐☐

Down syndrome risk, interpretation and action

Down syndrome risk: **1:** ☐☐☐☐☐☐

☐ if < than ☐ if > than

Interpretation:
- ○ screen negative
- ○ screen positive
- ○ uninterpretable
- ○ unknown/other

Action:
- ○ no further action
- ○ US/counsel for amnio/CVS
- ○ collect new sample & retest
- ○ decision made by physician
- ○ unknown/other

First Trimester ICP: FT-A 2011 Lab no:_____

Specimen FT-05 (or FT-05fb)

Patient data

Gestational Age: Decimal ☐☐.☐ Integer ☐☐

Maternal Age: Decimal ☐☐.☐ Integer ☐☐

NT MoM ☐.☐☐

Assay and interpretive results

PAPP-A (circle units): mIU/mL or ng/mL ☐☐☐☐.☐ MoM ☐.☐☐

hCG: IU/mL ☐☐☐.☐ MoM ☐.☐☐

hCGfb (circle units): ng/mL, mIU/mL ☐☐☐.☐ MoM ☐.☐☐

Down syndrome risk, interpretation and action

Down syndrome risk: **1:** ☐☐☐☐☐☐

☐ if < than ☐ if > than

Interpretation:
- ○ screen negative
- ○ screen positive
- ○ uninterpretable
- ○ unknown/other

Action:
- ○ no further action
- ○ US/counsel for amnio/CVS
- ○ collect new sample & retest
- ○ decision made by physician
- ○ unknown/other

Dimeric Inhibin-A Measurements

If your laboratory measures DIA in the first trimester, complete the following:

Sample	Dimeric Inhibin-A (DIA) Value[1]	Dimeric Inhibin-A (DIA) MoM	Marker Combination[2]	DS Risk
FT-01				
FT-02				
FT-03				
FT-04				
FT-05				

1 Assumes the units are pg/mL. If this is not correct, enter units here: _____.

2 If marker combination is maternal age with NT, hCG, PAPP-A and inhibin, leave column blank. Otherwise, enter the combination of markers used with DIA: _____.

First Trimester ICP: FT-A 2011 Lab no:_____

Interpretive Questions: Additional First trimester Ultrasound markers

Q1. Does your laboratory provide clinical results for Down syndrome screening?

[ ] Yes (continue with Question 2)
[ ] No (If no, please stop here)

Q2. Excluding NT measurements, does your laboratory incorporate any other ultrasound findings when calculating Down syndrome risk ?

[ ] Yes (continue with question 3)
[ ] No (If no, please stop here)

Q3. Which of the following ultrasound markers do you allow (check all that apply)?

[ ] Presence or absence (hypoplastic) of nasal bone
[ ] Tricuspid regurgitation
[ ] Ductus venous
[ ] Other (specify):_____
[ ] Don't know

Q4. If you use nasal bone measurements in your DS risk calculation enter adjusted risks for Specimen FT-04 assuming you know the following:

1 :☐☐☐☐ Nasal bone present
1 :☐☐☐☐ Nasal bone absent or hypoplasitc

Integrated Test Exercise

The following exercise will evaluate the laboratory's ability to report integrated risks by combining data from specimen FT-01 (this ICP FT-A 2011 survey) with data from specimen FP-02 (the CAP FP-A 2011 survey). Responses from a previous ICP survey indicated that most labs report integrated risks using second trimester quadruple test results. However, if your lab uses the triple test rather than the quad test report your CAP FP Survey risks in Q2.

A number of participants have indicated that if a CRL and NT measurement were provided for the FT sample that is the first trimester component of the Integrated Test exercise (rather than a NT MoM), it would expedite completing the exercise. Accordingly, the clinical information for specimen FT-01 will be used for the integrated test exercise (with the CAP FP-02 sample).

Q1. Does your laboratory perform integrated risk interpretations?

[ ] Yes, as part of a formal integrated screening program (continue with Question 2)
[ ] Yes, but only upon request (continue with Question 2)
[ ] No (skip to Question 5)

Q2. Report the risk for FP-02 from the CAP FP-A 2011 survey used by your lab

1 : ☐☐☐☐☐☐ risk based on quad markers [ ] second trimester risk [ ] term risk

1 : ☐☐☐☐☐☐ risk based on triple markers [ ] second trimester risk [ ] term risk

To complete the integrated portion of this exercise, follow these directions:

A. Assume that sample **FT-01** was received as the first part of an integrated test request but change the draw date of the sample and the date of the ultrasound examination to 12/05/2010 (it was given as 03/14/2011 in the histories on page 2). Use the CRL and NT measurements provided for sonographer GNG to calculate the median equation needed to generate the median value for FT-01 to calculate the NT MoM.

B. Assume that sample **FP-02** (distributed in the CAP FP-A 2011 survey) is the second part of the integrated test request**. Use the chemistry results that you reported on FP-02 with no changes, along with the corresponding clinical information**

Q3. Report the following risk(s) from the integrated test using the modified information from this ICP FT-A 2011 survey and data from the CAP FP-A 2011 survey (complete both if possible, even if that combination is not usually reported clinically).

1 : ☐☐☐☐☐☐ **Serum** Integrated risk (excluding NT) [ ] 2nd trimester risk [ ] term risk

1 : ☐☐☐☐☐☐ **Full** integrated risk (including NT) [ ] 2nd trimester risk [ ] term risk

Q4. Do you use the same parameters for the second trimester markers (e.g., uE3) for both the quadruple test (or triple test) and the integrated test (*e.g.*, are the log mean and standard deviation for uE3 in Down syndrome pregnancies the same)**?**
[ ] Yes [ ] No [ ] Don't know

Q5. Comments (e.g., improvements, deficiencies, future supplemental topics)

Testing Personnel signature _____ Date _____

Testing Personnel signature _____ Date _____

Laboratory Director's Signature _____ Date _____