

Exploring the 2003 Revision of the U.S. Standard Certificate of Live Births:
Results of cognitive interviews conducted in State 3 of 4
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1. Introduction

This report documents findings from the third phase of a larger study whose purpose is to understand how select medical and health items on the Facility Worksheet for the 2003 Revision of the U.S. Standard Certificate of Live Birth are collected. A total of four states were studied. Part 1 of the study took place in June, 2009. Part 2 of the study took place in October, 2009 and the third phase, discussed here, occurred in December, 2009. Each part was conducted in a different state.¹ The identity of all states is withheld to ensure confidentiality.

This is a study of how hospitals in the third of four states structure the task of collecting data on live births, as well as how hospital personnel go about completing this task. Cognitive interviews were conducted using the Birth Certificate Worksheet that was commonly used prior to the transition to the Electronic Birth Certificate (EBC) system. Time constraints made impossible the exploration of all items on the form. Instead, attention was given to those items most sensitive to rate changes associated with the 2003 birth certificate revision. Data collection focused on a few specified items in the Pregnancy History section and the Newborn section of the form. Additionally, *all* items in the Medical and Health Information portion were examined. Issues for other items on the worksheet are reported to the extent that the discussion was initiated by the respondents (not the interviewer). Interviews took place with hospital employees who are responsible for completing the state form and for transmitting data to the EBC database.

The next section briefly describes the qualitative methodology of cognitive interviewing, including the procedure for sampling interview respondents, the data collection method, and analysis plan. The third section of the report presents a summary of general findings, followed by a more detailed item-by-item analysis.

¹ Each state was a case study; therefore, a separate final report exists for each.

2. Methodology

Sampling and Respondent Demographics

Testing took place in State 3 in December, 2009. I conducted a total of 15 interviews at 15 different hospitals. Because this was a large state, interviewing took place over a two week period, in difference parts of the state. Seventeen interviews were originally scheduled, but one person cancelled and another did not show up for the interview.

Respondents were selected with a purposive sample in mind. The goal of a purpose sample is *not* to obtain a statistically representative sample. Instead, respondents were chosen who are responsible for obtaining the information required for completing the Facility Worksheet and for transmitting the information to the EBC.² Additionally, respondents were required to have been doing this job for six months or more.

Table 1 provides a breakdown of some respondent characteristics in a comparison by state. In general, respondents in State 3 are more similar to State 1 than to State 2. Specifically, respondents in State 3 and State 1 were more likely to have a high school diploma than a college degree. Almost half (45%) the respondents in State 2 had an Associate's degree or higher, while only 26% in State 3 had an Associate's or Bachelor's and 14% in State 1 had an Associate's degree and none had a Bachelor's degree.

Table 1: Demographic summary of respondents

	<u>State 3 Total</u> (N=15)	<u>State 2 Total</u> (N=11)	<u>State 1 Total</u> (N=14)
<u>Respondent Age</u>			
Under 40	4 (27%)	2 (18%)	5 (36%)
40 and Over	11 (73%)	9 (82%)	9 (64%)
<u>Highest Degree Attained</u>			
HS Diploma	11 (73%)	6 (55%)	12 (86%)
Associate's degree	2 (13%)	3 (27%)	2 (14%)
Bachelor's degree or higher	2 (13%)	2 (18%)	0 (0%)

Respondents were recruited through their workplace. A flyer was placed in various hospital newsletters and a letter of invitation was sent to hospital personnel to identify the birth clerks and request their participation in the study. Prior to participation, respondents were screened over the telephone in order to confirm that they met the criteria for inclusion.

² Although many job titles exist for this occupation, this report will heretofore refer to respondents as "birth clerks" for ease of reference.

At the time of the interview, respondents filled out paperwork whereby they agreed to the interview being audio-taped. The interviewer then explained the purpose of NCHS, described the study, and told respondents the manner in which the interview would be conducted. After these introductory remarks, the interviewer asked about the process by which the birth certificate form is completed in each respondent's hospital, including the respondent's role in this process. This was followed by item-specific probes designed to reveal respondents' interpretation of the item, the source of information for the item, and the ease with which they acquire the information necessary to complete it. Interviews were designed to last 60 minutes and a \$75 token of appreciation was given to respondents at the conclusion of the interview. Because it was necessary to speak specifically and exclusively with personnel responsible for completing the birth certificate form (i.e., birth clerks), remuneration was higher than the standard rate of \$40.

Data Collection

Cognitive interviewing, as a qualitative methodology, offers the ability to understand the interpretive process respondents go through in order to complete the Facility Worksheet form. It is a method that allows the researcher to collect detailed information on how the form is being completed from start to finish, and on respondents' understandings of their role in the process. Interviews usually began with a discussion of how the form is supposed to be completed in their hospital, followed by an explanation of how the form actually *is* filled out. Respondents were prompted to discuss any problems they encounter in completing the form and how they resolve these problems.

Additionally, the method allows the researcher to uncover respondents' interpretations of items on the form. This is important to the extent that their interpretation of the item shapes the type of information they seek to collect, where they get this information, and how they decide to record the information on the form. In the second part of the interview, the interviewer and respondent discussed specific items on the Facility Worksheet. The interviewer probed respondents for their understanding of what the item was asking, where they get the information for this item, and any problems they have in tracking this information down.

Method of Analysis

Data analysis proceeded according to the grounded theory approach which does *not* aim to test existing hypotheses, but instead generates explanations of how respondents complete the birth certificate form. The goal is to produce explanations that are closely tied to the empirical data. The process of analysis is a constant comparison of data in several steps. The first step occurs within the interview as the interviewer attempts to understand how one respondent has come to understand, process and then fill out an item on the form. The second step in analysis occurs once the interview is over, and is a systematic comparison *across* all interviews in State 3. This level of comparative analysis reveals patterns in the way birth clerks complete the worksheet.

3. Results

General Findings

The birth certificate worksheet

A copy of the birth certificate worksheet commonly used in State 3 was brought to each interview as a point of reference for both the interviewer and the respondent. While hospitals used slight variations of this worksheet to suit their own needs, most were very similar to the version I had, and all respondents recognized the items. Page two of the worksheet contains the items of specific interest to this study. These items are organized into three sections on the birth certificate worksheets used in this state. Table 2 shows the breakdown of each section by item.

Table 2: Organization of State 3's worksheet by birth certificate items and section name

<u>Section</u>	<u>Items of research interest</u>
Pregnancy History	36b: Date of first prenatal visit 36c: Date of last prenatal visit 36d: Prenatal visits (total) 37: Date last normal menses began
Medical & Health Information	43: History factors for this pregnancy 44: Infections present/treated 45: Obstetric procedures 46: Onset of labor 47: Characteristics of labor & delivery 48: Method of delivery 49: Maternal morbidity
Newborn	50: Clinical estimate of gestation 54: Abnormal conditions

More information than what is shown here is included on State 3's birth certificate worksheet, but only the items listed in Table 2 were probed during the interviews.

In 10 hospitals each section in Table 2 is included on one worksheet. However, in four hospitals the Pregnancy History section is on one worksheet and the Medical & Health Information is on another worksheet. In one other hospital, the Pregnancy History section is combined with item 50 (clinical estimate of gestation) on one worksheet, while the Medical & Health Information section and item 54 (abnormal conditions) appear on a different worksheet. The next section discusses how the worksheets are completed.

Responsibility for completing the birth certificate worksheet

Two basic patterns of collecting information for the birth certificate worksheet were observed in State 3. The most common pattern was one where the birth clerk has primary responsibility for collecting information for the birth certificate. In these cases, birth clerks use various sources (discussed later) to find the required information and record it on a worksheet. Once the worksheet is done, they enter the information into the EBC. This was the case in 10 of the 15 hospitals studied.

However, in several of the 10 cases where birth clerks have primary responsibility for completing the birth certificate worksheet, a slightly different pattern was observed. In three hospitals, the mothers are given a BCQ (birth certificate questionnaire) to complete either during registration or when they are admitted to the hospital. The BCQ contains items chiefly from the Pregnancy History section in Table 2, including date of first and last prenatal visit, total number of visits, date of last menses and estimate of gestation. In other words, the Pregnancy History items are not included on the worksheet completed by the birth clerk. Instead, the birth clerk collects these questionnaires (i.e., worksheets) from the mothers and enters this information directly into the EBC, along with the information she completed on her own separate worksheet (which includes all other items listed in Table 2).

A second, less common, pattern was also observed. In five hospitals, nurses had primary responsibility for collecting birth certificate information. Under this pattern, the nurses would fill out the worksheet and then forward it to the birth clerk who then entered it into the EBC. However, one hospital also gives a BCQ to mothers to complete while the nurses do the rest. In other words, this hospital uses two worksheets, one containing Pregnancy History information completed by the mothers and a second containing Medical & Health Information and Newborn information completed by the nurses. Both worksheets are forwarded to the birth clerk to enter into the EBC.

The occurrence of missing information

An important finding is that the method for completing the worksheets, as described above, is not always how the information gets collected. This is due to missing data. To summarize, birth clerks have two ways of obtaining information they need for the EBC. They either obtain worksheets with the information they need directly from nurses and/or mothers *or* they collect the information themselves from medical records (to record on a worksheet). In both scenarios information can be missing.

Worksheets from nurses and mothers: As indicated earlier, five birth clerks obtain information for the EBC from worksheets completed by nurses. All five respondents reported that information is sometimes – but not always – missing on the worksheets. For example, one respondent said that the nurses complete page 2 (i.e., all information in Table 2) “if they have time”. She further explained that about half of the nurses complete the entire worksheet. When items are missing, they tend to be those in the Pregnancy History section, not in the other sections. In another case, a respondent reported that the nurses are more likely to leave the entire

second page blank (which contains all items in Table 2) than they are to leave single items blank in a random manner. But, she said, this does not happen often.

When information is missing, all five respondents attempt to find the missing information. The sources they use for finding the information include the mothers, medical records, and nurses. Four said they ask the mother, three said they use the medical records and one said she will ask the nurses. Three respondents reported using more than one of these sources (if necessary). One person said she only asks the mother for missing information and another respondent said she only checks the medical records for missing information. If they can't find the information from those sources, both respondents enter "unknown" into the EBC.

Worksheets completed by birth clerks: Missing data is possible not only when nurses or mothers fill out a worksheet. When the birth clerk is the person responsible for filling out the worksheet, the sources that she uses can also be missing data. This is especially true for the prenatal record in the mother's medical chart, a source used for the Pregnancy History section of the worksheet. As a result, birth clerks must make decisions about how to deal with missing data on the worksheet *and* in the medical records.³

Problems faced by birth clerks

Difficulties associated with the medical records: Almost all respondents (13) use the medical records to complete the birth certificate worksheet, regardless of whether it is their primary responsibility or they obtain the information from worksheets completed by nurses or mothers. In so doing, they may find that the medical records (i.e., the mother's chart, including the prenatal record) contain insufficient detail for their needs. When this happens, birth clerks in State 3 employ several different strategies. They might:

- 1) Ask the mother for the missing information. In fact, this was a common approach, reported by all 13 respondents.
- 2) Contact the mother's OB office to obtain an up-to-date version of the prenatal record. Six respondents said they will contact (or have a secretary contact) the OB office to request a fax when the prenatal record is missing information or is not up-to-date. Full dates are frequently missing for the last prenatal visit and for total number of prenatal visits because the hospital receives the prenatal record early – that is, before prenatal care ended.

However, of these six respondents, five reported that the updated records do not always arrive in time for them to use. One respondent reported that even though she has the secretary make a request for a fax of the updated records, she does not receive them in time about 25% of the time. Another respondent said that maybe 2-3% of the time she does not get the updated record in time. In these cases the birth clerk will ask the mother for the missing information. Another respondent said that when the prenatal record is

³ Five hospitals have electronic medical records (EMR), but in no case did the EMR automatically populate fields for the EBC. As a result, there was no difference in the organization of the birth clerks' jobs or in the strategies they used for missing data between hospitals with EMR's and those with paper medical records.

faxed too soon (and not up-to-date), she simply “goes by what’s there.” She does not request an updated version from the OB and does not ask the mother.

It was difficult for respondents to say with accuracy how often they have to contact the mother’s OB office. Estimates of how frequently this occurs were not obtained from every respondent. Those who did give an estimate ranged from 5% of the time to 95% of the time. One respondent said she always asks the mother first, and if the mother doesn’t have the answer, then the respondent will call the OB office and talk to someone directly rather than waiting for an updated record to be faxed. She said about 5% of the time the mother will not know the answer and the birth clerk will have to call the OB.

Nine respondents did not report that they ever contact the OB office for prenatal records. Most hospitals *do* get the prenatal records, even if early. But many respondents will ask the mother for the correct (i.e., updated) information rather than contact the OB office. One birth clerk reported that sometimes the prenatal record does not get faxed to the hospital at all. She said this happens maybe 5% of the time. Even in these cases she does not call the OB to get the records faxed. Instead, she asks the mother these questions. Only one respondent said she never asks the mother for missing or incomplete information. The birth clerk takes as given what is in the prenatal record, even if, according to her, the information might be inaccurate.

- 3) Piece together information from different sections of the medical records and estimate a value.

All respondents reported having access to medical records (in 5 hospitals these are electronic records). But sometimes they reported difficulties in working with medical charts. See items 36, 37, 44, 46, 47, 48, and 50 in the item-by-item analysis as examples of piecing together information, making judgments about the information they see, and, perhaps, estimating a value. When information from the prenatal record is needed for the Pregnancy History section of the worksheet, it can be incomplete or missing altogether. Sometimes, birth clerks take the information they do have, and use it to arrive at what they deem to be a reasonable estimate of the value. The same is true for estimating gestation in item 50. Similarly, determining whether a trial of labor was attempted prior to a cesarean is not a straightforward process when it is not directly stated in the medical charts. Instead, birth clerks look for clues stated in other ways. This is usually because the level of detail they need is not available. For example, a chart might say that labor was precipitous or prolonged, but not say by how many hours – a detail respondents say they need, as listed on the worksheet. The same is often true for items that specify a cause or reason for an action. For example, respondents reported that a chart may indicate that steroids were used, but it will not say why (e.g., for fetal lung maturation) or the chart will indicate ‘fetal intolerance of labor’ but not say what the ‘following action’ was.

Additionally, working with the medical records requires an understanding of certain medical terms and procedures. Difficulties doing this were found for four respondents. Items 43, 45 and 47 were cited as most problematic in this regard. For example, words

like cephalic version, names for different steroids, and the difference (if any) between cephalic, breech, and non-vertex can be confusing. (See the item-by-item analysis for more detail.)

- 4) Record the value as ‘unknown’ in the EBC. Most respondents choose the previous strategies, but they will record the answer as unknown if they feel they cannot arrive at a solid decision.

Getting information through word-of-mouth: When information is missing, or the level of detail is insufficient in the medical records, six respondents said they sometimes rely on word-of-mouth from the nursing staff. For example, one respondent said that they are a small unit “so everyone knows what’s going on with all the patients.” She described it as being “in tune” with her work environment. One person also said she might only know that something happened if she was working that day, and someone else said she only knows if she “overhears the nurses”. This was cited for items 44, 49, and 54 in particular.

Short on time: Three respondents brought up the 5-day deadline as difficult to meet on a regular basis. One person said that when the medical record is missing information she tries to get it from the mother. However, if she cannot interview the mother before she’s discharged, the respondent has to enter the information as ‘unknown’ in the EBC, which she sees as less than ideal.

Use of guidebook/Question resolution

When asked if they had a guidebook or manual to help them if and when they had questions about how to complete the EBC, 11 respondents said they did. However, most respondents did not appear to be referring to or thinking about the official guidebook. Nine said that they use the guidebook only for “unusual cases” such as surrogate mothers, adoptions and babies born outside hospitals. One respondent described it as using it for “something that doesn’t happen every day...just to make sure I’m doing it correctly so I don’t get ‘dinged’ on it.” Interestingly, six respondents brought up babies born outside of the hospital as an unusual case that they use the guidebook for. One respondent reported that in the past month alone there were four cases where the baby was born outside of a hospital and was brought in by EVAC. Seven said the guidebook was helpful in these cases, and two said it was not helpful. Several said that even when they see an answer in the guidebook, they still call the state or the county to confirm or clarify the answer.

Two respondents said the manual was helpful, but not in clarifying how to complete the EBC. Rather, it was helpful when they have to “prove” to mothers that they have to complete the birth certificate a certain way. Both used paternity issues as an example. There are rules for who the birth clerk can list as the baby’s father, such as in cases where the mother is married to someone other than the baby’s biological father, and sometimes mothers don’t believe that this is true.

Some respondents said they have the guidebook, but never use it. Mostly this is because it’s more helpful to call the state (or county) than to try to look the answer up in the book. As one respondent put it, “They’re the ones receiving the certificates, so they know the correct way.”

When calling vital statistics officials, six respondents call the state directly, but five said they call the county first. When asked why, one respondent said she calls the county first because they used to be the ones to verify the birth certificate forms before sending them to the state. So they are very knowledgeable about the issues and have an established relationship with some of the birth clerks. Another person said she calls the county person first to make sure all the information is correct because “now the state sees our mistakes!” It used to be that they sent the birth certificate to the county first, and the person there would catch and correct errors for them before sending it to the state.

Training

When asked about training, most respondents said they were trained by their predecessor. Many mentioned a computer training session sponsored by the state when they first transitioned to the EBC system, but this was primarily on how to use the computer software, not on how to fill out the birth certificate worksheet.

Item-by-Item Analysis

Because time precluded the exploration of all items on the Facility Worksheet, they were prioritized according to those most apparently affected by the 2003 Revision of the U.S. Standard Certificate of Live Births, as indicated by changes in national statistical rates. This section emphasizes research findings according to this prioritization of items. The following information is organized according to the birth certificate worksheet that was used in the cognitive interviews (see Table 2).

Pregnancy History Section:

36b, c, d – Date of first & last prenatal visit, and total number of visits

Birth clerks obtain this information several different ways. Eight use the prenatal record to complete these items on their own worksheet. Four get it from a worksheet completed by the mother, and three use a worksheet completed by the nursing staff. However, when information is missing from the mothers’ or nurses’ worksheets, four birth clerks will use the prenatal record to try to find the information. Three respondents reported never using the prenatal records. As noted earlier, prenatal records can be incomplete because they arrived at the hospital too soon and requests for updated records don’t come in soon enough. Respondents said that mother’s worksheets are regularly incomplete largely because they cannot remember this information in detail (or at all).

When prenatal information is incomplete or missing (from any of these sources), over half the respondents said they ask the mothers for the information. But because the mothers cannot usually remember enough detail (such as a full date), the birth clerk helps them arrive at an estimation. One respondent said this information is supposed to be on the mother’s worksheet, but that 75 to 80 percent of the time mothers cannot remember this information. In these cases

the respondent will try to jar their memory. For example, if they cannot remember 36d, the respondent will give them a “ballpark figure” like 12 to 15. Once she does this, the mother “can usually come up with something.” Several respondents who obtain the total number of visits from the mother reported that, for most mothers, this number is a pure estimate. And one respondent said this number is sometimes incorrect on the mother’s worksheet because mothers don’t know what to include as a prenatal visit. For example, one mother wrote in 40 because she was thinking of all kinds of doctor visits, such as getting blood drawn for lab work and getting an ultrasound.

Not all birth clerks ask the mother for missing information on these items. Two respondents estimate on their own. For example, one reported that these items are left blank on the mother’s worksheet about 85% of the time. In these cases she will mark 14, 15, or 16 for total number of prenatal visits because this is the average number. When asked how she decides which number to put (14, 15, or 16) she said she “completely guesses” most of the time. Additionally, 36c is not on her worksheet at all, so she has to remember to ask the mother. If the mother does not remember the date of the last prenatal visit, the respondent said she knows that it usually occurs about one week prior to the birth, so that’s the date she enters. Another respondent said that 36d can be missing from the nurses’ worksheet. When this happens she enters 10, explaining that this is what she was told to do when she first started this job 17 years ago.

37 – Date last normal menses began

A majority of the respondents said that full dates are rarely available for this item. The day is the piece of data most likely to be missing – the month and year are usually available. But sometimes the entire date is missing. This information is obtained several different ways. Some birth clerks get it from the prenatal record, others get it from the mother (worksheet or interview), and a couple use the mother’s medical chart, such as the facesheet (but not the prenatal portion of the chart). If the information from their primary source is missing or incomplete, strategies for acquiring the information include asking the mother, estimating the date, looking in other charts, or leaving it as unknown.

Respondents that ask mothers for this information usually have to prompt their memory. One respondent said she will ask the mother if it was the beginning, middle or end of the month. If the mother says it was the end of the month, the respondent will enter 25 as the day. When asked why the 25th (as opposed to, say, the 27th), the respondent said it was just something she came up with. Another respondent uses a similar strategy by asking mothers whether it was summer, winter, etc. and then trying to narrow it down from there.

Several respondents said this item is problematic because mother’s do not know what menses means and that’s why they leave it blank on the BCQ. So the respondent has to interview the mothers and define it for them in order to get a date.

Medical and Health Information Section:

43 – History factors for this pregnancy

Most birth clerks get this information from the mother's medical chart, but some get it from the prenatal record and others from the nurses' worksheet. If information is unclear or they have a question, one of two things will happen. Respondents will either try to resolve the question, or they will simply record unknown or none in the EBC. For those respondents who try to find a clear answer, several strategies are employed, with no single method being most common. Some will ask the mother, others will ask a nurse. Some will check another medical record (e.g., they will check the prenatal if they see nothing in the mother's chart).

Several issues were identified by respondents. Three reported that the number of previous cesareans is usually missing. In all cases they will ask the mother for this information.

Others cited difficulty with infertility. Several respondents said they can never find information on infertility treatment. One reported that she has to ask the mother about her last normal period, at which point she will bring up any infertility treatment she received. Another simply reported that she has never seen infertility treatment indicated in the prenatal record (which is the source she uses to complete this item).

Diabetes came up twice as another item that can be difficult. These respondents both said it is difficult to determine whether or not the diabetes was gestational. One respondent said she will ask the nurses. The other respondent said that if she sees that the mother had diabetes, but can not tell for sure if it was gestational, she will leave it blank.

Other respondents more generically stated that this item can be difficult when terms are unfamiliar, or the medical records are unclear or lack sufficient detail. One respondent gave the example of hypertension. She said "it might not be clear what kind." It might look like preeclampsia in one part of the medical record and eclampsia in another part. Similarly, the doctor's notes aren't always clear or they may contain unfamiliar terms. In this case she has to double check with a nurse because she has no medical background. A couple other respondents gave "other previous poor pregnancy outcomes" as an example of an item that lacks detail or clarity in the medical record. One respondent said the medical record never shows if this was a "growth-restricted birth," at least not directly. She said the baby might be in the NICU and that tells the respondent something.

A couple respondents said that they do not specifically look for this information. Instead, as one respondent put it, "I come across it."

44 – Infections present and/or treated during this pregnancy

Most birth clerks (11) use a medical record to get this information, either the prenatal record or the mother's hospital chart. Several (4) use a worksheet filled out by the nurses. However, one respondent stated that this information is not in the medical record. The medical record is on the computer but she doesn't have access to the entire record. As a result, she always enters 'none'

into the EBC. The only exception to this is when she overhears the nurses saying that a particular mother “has herpes or something.” That’s the only way she discovers this information.

Most said there is not a problem finding this information, but if there is, they do not ask the mother for it. Instead, they ask a nurse or use different parts of the medical record (e.g., if they typically use the prenatal record, they will check the mother’s chart and vice versa). This is an example of an item that can require that birth clerks check for information in more than one place. Several respondents reported having to do this.

Finally, one respondent *will* confirm this information with the mother. If an infection is listed in the medical chart but the mother denies that she had it, the respondent will *not* enter it into the EBC. Similarly, if the mother answers “don’t know” to the infection question, the respondent takes this as an indication that the mother doesn’t want it reported, and respects those wishes.

45 – Obstetric procedures

Most birth clerk use the mother’s medical chart to obtain this information, but a couple reported using the prenatal record specifically. Several use a worksheet completed by the nurses. Several respondents reported no problems finding this information, but six did mention some difficulties, including not knowing where to look, not knowing what cephalic version was, or only knowing if they happened to be working the day it occurred. One respondent said she rarely sees any of these procedures and routinely marks ‘none’. She can remember only two times that she’s seen external cephalic version and admitted that she’s not sure if that’s because it never happens or because it’s not clearly documented in the medical chart.

46 – Onset of labor

Most respondents report obtaining this information from the mother’s medical chart (not the prenatal record). A few get it from the nurses’ worksheet. If the information is missing or incomplete, several will ask a nurse for the information. A couple will check different parts of the medical record if the nurse’s worksheet is incomplete. Most said the item didn’t pose any particular problems. However, two respondents indicated that the medical charts lacked the detail required by the EBC. One respondent said that she has to see that precipitous labor was less than three hours in order to check that box. It might say “precipitous”, but not give a timeframe. The same goes for prolonged labor. The person who trained the respondent to do this job said that the number of hours has to be indicated in order to check anything (she has been doing this job for 14 years). Another respondent also reported that the medical record will indicate only if labor was precipitous or prolonged, but not say by how many hours.

47 – Characteristics of labor and delivery

Most respondents cited the mother’s medical chart as the source for this information, however, several use a worksheet completed by the nurses. If they encounter missing or incomplete information, they will either ask a nurse or look in multiple places (in the medical chart) for the answer.

A lack of detail and not knowing causal factors was cited by three respondents as problems they have with this item. For example, one respondent may see that steroids were used, but it will not specify that it was for fetal lung maturation. The same is true of ‘fetal intolerance of labor’ – the medical chart will not say what the ‘following action’ was, but the respondent marks it anyway.

Another respondent said that steroids would be listed with all other medications, which can be a long list. If this list IS long, it will not be included on the chart and she would have to look for it somewhere else. Additionally, she admitted that she does not know all the words for steroids and she only marks it if she specifically recognizes a steroid name. A third respondent also mentioned difficulty with steroids. The use of steroids will be listed, but the reason for receiving them might be hard to figure out. The reason would be in the doctor’s notes, but the respondent doesn’t always understand them or cannot read the writing.

For fetal intolerance, one respondent said this is not common for a vaginal delivery, so knowing that helps her figure out what to look for in this item. She basically pieces together information from different items to understand the what took place during any given delivery.

Finally, sometimes terms can be difficult to deal with. One respondent said that she *never* marks ‘non-vertex presentation’ in this item because it would show that under item 48c (breech fetal presentation). She said that cephalic, breech, and non-vertex all mean the same thing, so she doesn’t record redundant information.

48 – Method of delivery

As with other items in the medical and health information section, the majority of respondents (11) cited the mother’s medical chart as the source of information; however, several (4) use a worksheet completed by the nurses. If the birth clerk encounters problems with missing or incomplete data, some (3) will ask a nurse. For example, one respondent said that while the nurses are good about completing C and D (fetal presentation and route of delivery), she usually has to prompt them to fill out A and B (use of forceps and vacuum extraction, including trial of labor).

Other respondents (3) said they will ask the mother about certain information in this item, especially whether or not a trial of labor was attempted.

Obtaining an answer to the question of whether a trial of labor was attempted requires more work than many of the other items. Many respondents look in multiple places of the medical chart for information to see if they can piece together the answer. Sometimes this involves making a judgment call or estimating the answer. One respondent reported that it can be difficult to tell whether a trial of labor was attempted. She said she is mostly like to see trial of labor if it is the mother’s first cesarean, so that’s one clue she looks for. The chart might also indicate that there was a complication. It might say that the baby was breech or that it was a failed induction. Other things that could mean a trial of labor was attempted include risk of dilation, risk of decent, seizure, or vaginal bleeding. If the respondent sees these words in the medical record, she asks the mother about a trial of labor. Another respondent also mentioned seeing failure to progress or failure to descend as tips that a trial of labor was attempted. In other words, she said

she looks for a reason why the cesarean was performed as a clue for whether a trial of labor was attempted. As another respondent put it, “if ‘failure to progress’ is in the chart, you know to mark ‘yes’” to trial of labor. Another respondent said she always marks ‘no’ to trial of labor if she sees that it was a repeat cesarean. One respondent said she can sometimes tell if labor occurred by looking at the delivery time line and the corresponding cm dilated of the mother. In all, 10 respondents said that they have to sift through information in order to piece together an answer to whether or not a trial of labor was attempted. And three will confirm this information with the mother.

One respondent said that the medical record does not contain the level of detail necessary to complete the items on use of forceps and vacuum extraction. Specifically, the record does not show that the doctors tried one method and it did not work, then tried another method which did work. The record only shows what *did* work, so she always marks ‘no’ to these items (because they focus on whether the method was *unsuccessful*).

49 – Maternal morbidity

Most respondents get this information from the mother’s medical chart and a few get it from the nurses’ worksheet. However, several respondents reported that they have never seen anything related to this in the medical charts. One person said she is not sure where this information would be. As a result, she always enters ‘none’ as the value. This suggests that some birth clerks are not familiar with these terms. One person said she assumes that maternal transfusion refers to blood transfusions received by the mother.

Because they do not see these items in the medical charts (or do not know where to look) and don’t understand the terms, several respondents said they rely on word-of-mouth to obtain this information. For example, one respondent said she would “just know” because she “is always here and knows where patients are”. Another respondent said that if the mother is not in her room, but the baby is in the nursery, then she needs to look for these things. One other respondent said she simply asks the mother if she sees that complications were present during delivery.

Newborn section:

50 – Clinical estimate of gestation

Most respondents (11) obtain information for this item from the mother’s medical chart. Three others use the nurses’ worksheet and one asks the mothers directly. Frequently, there are problems with missing data. For example, one respondent reported that this information is missing from the nurses’ worksheet about 50% of the time. In those cases she will ask the mother how many weeks pregnant she was when she was admitted to the hospital. Others look for this information in multiple places (e.g., the admittance form or the prenatal record). If it is still difficult to find, some respondents will enter ‘unknown’, but others will estimate the number rather than leave it as missing. For example, one respondent said if she can’t find the number, she will ask the mother for the date of her last period, and then use “the wheel” to arrive at the number of weeks. Another respondent said she can usually find something in the medical

record, but it might say 38.5. In this case the respondent will round up to 39 weeks because the computer will not accept decimal places. Similarly, if the record said 38.4 she would round down to 38.

54 – Abnormal conditions

Many respondents said that the most complete source of information for this item is the newborn's medical chart. However, only five respondents actually use that as their primary source of information. Four others said they do not have access to it or simply do not usually look in the baby's chart as part of their routine for gathering information.

Assisted ventilation is the most common item they see here. One respondent said this means that the doctor has given the baby "a few puffs of air with a mask". But, she said, in her hospital a baby has never been given air for more than 30 minutes, so she has only ever marked the first category. She said she knows that assisted ventilation did *not* occur when the mother's chart says 'spontaneous breathing'. Two respondents said they sometimes discover that assisted ventilation occurred by overhearing the nurses. They hear the nurses say that a particular baby was on assisted ventilation, and that's the only way they might come across this information.

Others will look at the baby's chart as their secondary source of information if the mother's medical chart indicates that some complications were present. Even so, the level of detail they need for the EBC is sometimes missing, especially with assisted ventilation. Three respondents said they have to ask the nurses if assisted ventilation occurred right after delivery because that information will not be in the baby's chart. Another respondent remarked that there is a disconnect between the computer fields and the worksheet. The worksheet has three timeframe categories for assisted ventilation and the computer has only two categories (the computer does not have the 'immediately following delivery' category).

Issues raised by the respondent:

Respondents did not raise many issues beyond the ones discussed already. However, one person did mention that 42d, e (other pregnancy outcomes) is difficult. She said "that's the only one that's a thorn in my side." This information is frequently missing in the prenatal record and she has stopped asking mothers for the information because they get angry. The respondent defines this as a sensitive topic and if the information is missing from the prenatal record, she leaves it as "unknown" and does not try to find the answer.