The University of Michigan
Industrial & Operations Engineering 481: Practicum in Hospital Systems

Birth Certificate Process Reengineering
Final Report

December 9, 1996

Project Team:
Bryan Griffith
Amy McEvoy
Katie Weaver
BUFFALO REGIONS FLORAL RECOGNITION

First Report

December 20, 1966
# Table of Contents

## Executive Summary

I. Overview

II. Current process observations

III. Recommendations

## Detailed Report

1.0 Introduction and Background

2.0 Approach and Methodology

3.0 Detail of Current Situation

   3.1 Identification of information needed
   3.2 Collection of information
   3.3 Preparation of information
   3.4 Submission of information

4.0 Observations and Findings

   4.1 Current process
   4.2 Prenatal information and impending changes
   4.3 Benchmarking study

5.0 Recommendations

   5.1 Move the clerk closer to the point of service
   5.2 Collect information on a portable computer
   5.3 Provide information during prenatal care
   5.4 Create legal document for parents who refuse to establish paternity
   5.5 Authorize clerks to sign birth Certificates
   5.6 Print business cards for clerks
   5.7 Cross-train maternity ward and birth certificate clerks
   5.8 Create a birth certificate form in the WatchChild system
# Table of Contents

**Executive Summary**

I. Overview  
II. Current process observations  
III. Recommendations  

**Detailed Report**

1.0 Introduction and Background  

2.0 Approach and Methodology  

3.0 Detail of Current Situation  
   3.1 Identification of information needed  
   3.2 Collection of information  
   3.3 Preparation of information  
   3.4 Submission of information  

4.0 Observations and Findings  
   4.1 Current process  
   4.2 Prenatal information and impending changes  
   4.3 Benchmarking study  

5.0 Recommendations  
   5.1 Move the clerk closer to the point of service  
   5.2 Collect information on a portable computer  
   5.3 Provide information during prenatal care  
   5.4 Create legal document for parents who refuse to establish paternity  
   5.5 Authorize clerks to sign birth Certificates  
   5.6 Print business cards for clerks  
   5.7 Cross-train maternity ward and birth certificate clerks  
   5.8 Create a birth certificate form in the WatchChild system
Birth Certificate Process Reengineering

Executive Summary
I. Overview

The goals of the birth certificate reengineering project are to increase patient satisfaction by streamlining the capture of birth certificate information, improve the speed and accuracy of birth certificate completion, and eliminate unnecessary costs. The project team first studied the current process, then identified opportunities for improvement, developed practical recommendations, and created an action plan for the implementation of those recommendations. In each of these phases the project team considered the birth certificate process as a facet of the larger care process in order to identify any opportunities for integration and to evaluate the impact of proposed process changes.

II. Current process observations

After examining the current process in detail, including an actual walk-through with the birth certificate clerk, the project team identified the following opportunities for improvement:

- Multiple visits to patient’s room required to collect information and return for patient signature

- Three redundant data transfers: 2 handwritten forms, one electronic data entry

- Excessive time spent walking between 4th floor Women’s Hospital and Vital Statistics office in Taubman Center basement

- Excessive time spent delivering birth certificates to practitioners for signatures, waiting for signatures, picking up signed birth certificates.

- Birth certificate clerk often needs to explain the birth certificate process to patients, show them the folder/worksheets that they should have already received, and sometimes give them additional copies of the worksheets, etc.

- Patients are unfamiliar with the birth certificate process until after delivery

The project team also benchmarked the UMHS birth certificate process with other Michigan hospitals to generate further ideas for improvement. Of these hospitals, St. Joseph’s Mercy appears to have the most efficient process. St. Joseph’s credited its success to a recent reengineering effort which provided mothers with information during a prenatal visit, moved clerks closer to the point of service (maternity ward), and empowered the clerks to take responsibility for the process.

UMHS is currently considering implementing WatchChild, a customized commercial software and hardware system for keeping all prenatal and delivery records. The project team and MCIT determined that it is technically feasible to design a custom birth certificate
screen that automatically imports all the data for the birth certificate from records already collected. This birth certificate data could then be printed and uploaded to the State, eliminating most of the current process flow. Implementation of WatchChild is still pending approval.

III. Recommendations

The project team has considered the costs and benefits of the following recommendations and worked with involved parties to develop an action plan. This plan is included in the body of the report.

1. Move birth certificate clerks closer to point of service.
   - eliminates travel time between Vital Statistics office and Women’s hospital.
   - facilitates effective communication between clerks, patients, and nurses.
   - only a small workspace needed.
   - 109 clerk hour ($958) savings in reduced travel time alone.

2. Supply clerks with laptop computer with EBC software, printer, and modem. The clerk would take the laptop from room to room to conduct patient interviews and obtain parental signatures on the spot.
   - eliminates multiple trips to patient’s room.
   - eliminates redundant handwritten birth certificate forms.
   - ensures parents’ signatures appear on birth certificate and parents can apply for social security.
   - cost of hardware: $1596.
   - $2,808 estimated annual savings due to error reduction.

3. Provide mothers with birth certificate process information in a pre-natal session.
   - educates mothers not to leave hospital before providing information to clerk.
   - educates unwed mothers about establishing paternity so that it can be established expediently after birth.

   - protects the hospital from State accusations that it is not trying hard enough to establish paternity.

5. Certify birth certificate clerk to sign birth certificates.
   - eliminates trips to other parts of the hospital and waiting time for signatures.
   - takes documentation workload off of practitioners.
6. Educate nurses on unit and additional hospital staff to answer patient questions about birth certificate process.

7. Cross-train birth certificate and maternity ward clerks.
   - provides constant availability of expertise.
   - allows more flexible staffing to better match workload.

8. Create custom birth certificate form with WatchChild.
   - will eliminate majority of birth certificate workload.
   - simplified process allows integration of the tasks performed by birth certificate and maternity ward clerks.
   - Estimated cost of $\leq 10,000 outweighed by savings in staff integration.
Birth Certificate Process Reengineering

Detailed Report
1.0 Introduction and Background

This project seeks to better serve University of Michigan Medical center patients by streamlining the capture of birth certificate information, improving the speed and accuracy of birth certificate completion, and reducing unnecessary costs. In order to meet these goals, the project team first studied the current process and then identified improvement opportunities based on the following client objectives:

1. Complete accurate birth certificate documentation before the mother is discharged.

2. Eliminate redundant collections of information.

3. Integrate the birth certificate process with the prenatal/perinatal care process.

4. Move data collection and processing as close as possible to the site of care.

5. Provide electronic support for all data.

6. Collect as much information as possible prior to labor/delivery.

2.0 Approach and Methodology

Since achievement of client’s objectives will likely affect the departments and staff of the birthing center, its affiliated clinics, Medical Information Services (MIS), and MCIT, the project team interviewed a variety of sources to assess the current situation. The project team then involved these sources in developing an action plan. Key contacts include:

- DeNise Crockett, Birth Certificate Clerk, Vital Statistics
- Barbara Dubler, RN, Head Nurse, Women’s Hospital
- Lillie Carter, former Vital Statistics supervisor, MIS
- Carolyn Etzel, Supervisor OB/GYN Outpatient Services
- Sandra Hoffman, Vital Statistics supervisor, MIS
- Margaret Hough, RN, Head Nurse, Outpatient Ob/Gyn Clinics
- Peggy Phillips, OB/GYN information systems manager, MCIT
- Brent Albrecht, MCIT

In order to understand the current process, the project team reviewed available MIS documentation on the birth certificate process, including patient forms, volume data, and work instructions for the birth certificate clerks, and then actually followed a clerk on the job.
The project team conducted a benchmarking study of the birth certificate processes in three other Michigan hospitals in order to evaluate the comparative strengths and weaknesses of the UMHS process and generate more ideas for improvement. This study is included in Appendix B, and its results are summarized in the Observations and Findings section of this report.

In order to identify opportunities for integration and to insure compatibility with any changes in the OB information system, the project team also contacted MCIT to review the capabilities and implementation plan of the computerized WatchChild system. MCIT also provided hardware cost figures and recommendations for implementing new hardware to improve the current process.

3.0 Detail of Current Situation

Currently, the Birth Center at the hospital does not interact with the pre-natal clinics in the collection of information for a newborn's birth certificate. The entire process is facilitated by the hospital's birth certificate clerk; the hospital employs 2 part-time clerks in this capacity. No other hospital employees are cross-trained to perform the duties of the birth certificate clerks. Therefore, when the clerks are not on duty, work piles up until the next one begins their shift.

After delivery, the parents are supplied with a folder containing a variety of pamphlets, brochures, and other forms of information regarding the care of their baby. Included in this folder is a worksheet that the parents are required to complete in order to provide the clerk with basic information for their child's birth certificate. A copy of the worksheet is included in Appendix C.1. Also included in the packet is a sheet of paper telling the parents how to apply for a copy of the birth certificate at the Washtenaw County Clerk's office. The rest of the process is handled by the clerks:

3.1 Identification of information needed

A flowchart of the current process is included in Appendix D.1. Every morning, the clerk begins the process by logging into the hospital computer system. The clerk then prints out a list of the most recent hospital births and identifies the patients that she has not contacted.

At this point, the birth certificate clerk must gather all of her important documentation and carry it from her office in the Taubman Center basement to the Birth Center on the 4th floor of Women's Hospital, where she visits both 4 East and 4 West. Here, she stops at the nurses station to pick up any birth certificate worksheets that have been completed by parent, and looks at the chart on the wall to identify the patients' room numbers.

The clerk then weeds through a pile of papers to determine which patients have given her their worksheets, yet still need to be interviewed, what patients have not yet turned in their worksheets, and what patients have left the hospital. This process can take anywhere from 5 to 20 minutes on each wing, depending on the
number of births. At this point, she is able to identify any parents that have left the hospital without completing the birth certificate worksheet. Later, she will have to contact these parents via telephone at home in order to gather the necessary information. Most of the work for this step takes place in any available inch of the nurses station, which usually ends up being the top of a corner garbage can.

3.2 Collection of information

With the list of patients and their room numbers, the clerk begins to visit each mother individually. Frequently, however, the mothers are asleep, out of the room, or have not yet completed the initial worksheet. They are often unaware of the process or have not yet received the worksheet. At this point, the clerk gives them another copy and briefly explains the process, telling them that she will return later to pick it up. If the patient is asleep she leaves a copy on the door.

If the mother has already turned her worksheet in to the nurse, or has it completed when the clerk arrives, the clerk fills out a second worksheet (see appendix C.2) by conducting a brief interview with the mother. The answers to most of the questions are requested by the State and included in the entry to the EBC system, but are not required and do not appear on the final birth certificate. The worksheet also requires medical data which the clerk collects from the mother’s delivery sheet or records at the nurses station.

The clerk sometimes skips or shortens the patient interview if she is short on time or the patient is unavailable. The clerk occasionally skips the interview because of language barriers with the patient. Sometimes the clerk curtails the interview if she senses that the patient is uncomfortable answering some of the questions in front of visitors in the room.

3.3 Preparation of information

After collecting the patient information, the birth certificate clerk returns to the Vital Statistics office to enter all of the information into the EBC. The clerk reports this to be the most time consuming aspect of the process and estimates that she types approximately 10-12 birth certificates per day.

When the birth certificates are entered, the clerk types out preliminary copies of the birth certificate, which then goes through several rounds of proofreading. At this point, the clerk is supposed to return to the Birth Center for the mothers’ signatures. However, as this step is not required before the birth certificates are submitted to the County, and since many mothers have already left the hospital at this point, the clerk often skips this step to save time. This means that the patients lose the option of applying for social security at the same time as the birth certificate is submitted, since this option requires the mother’s signature on the birth certificate.
The clerk then delivers copies of the birth certificate to the appropriate practitioners for their signatures. The usual turnaround time to get these signatures is one day, but occasionally it takes longer. For the practitioners who are not particular about signing their own birth certificates, the clerk leaves them for her supervisor, Sandra Hoffman, to sign.

3.4 Submission of Information

After all of the necessary signatures have been obtained, the clerk sends the prepared birth certificates to the Washtenaw County Clerk's office. In order to do this, she bundles them into an envelope and walks it over to the hospital's metered mail room.

Occasionally information sent to the Washtenaw County clerk is incorrect. This is generally brought to the attention of the hospital by the parents when they apply for their child's birth certificate at the county clerks office. To correct the mistake, the parents must contact the birth certificate clerk at the hospital, who then brings up the hospital records. If the mistake is the fault of the hospital, the hospital is required to pay a correction fee to the county of $26. To correct the error in the county records, the birth certificate clerk fills out a correction form with the right information and sends it into the Washtenaw County Clerk. If the mistake is the parent's fault, they are required to pay the fee, but the same paperwork is filled out by the birth certificate clerk at the hospital.

Approximately every two weeks, the birth certificate clerk downloads the data from the EBC system to the State of Michigan, where it is used for statistical purposes. The hospital also maintains electronic records of this data for their own purposes for about two years after the birth of the baby.

4.0 Observations and Findings

4.1 Current process

The following observations about the current process are targets for improvement.

- The clerks spend a large amount of time transferring redundant information between paper records and between those records and Electronic Birth Certificate program.
- If the clerks follow the current work procedure, they may make 2-3 visits to each patients room.
- The clerks have to spend an excessive amount of time shuffling between the Vital Statistics office and Women's Hospital (14.1 minute round trip.)
Birth Certificate Process Reengineering

- Although the birth certificate worksheet is given to the parents along with other information after delivery, many parents fail to fill it out in time, lose it, or have never seen it, which greatly slows the process.

- Mothers are often sleeping, out of the room, or entertaining visitors when the clerk stops by to collect information, in which case the clerk must make a second trip.

- In order to get an authorized practitioner’s signature on the birth certificate, the clerks must drop the certificate at the practitioner’s office and wait up to several days before it is signed.

- Due to the remoteness of the Vital Statistics office and part-time schedules of the clerks, they are often inaccessible to patients and Women’s Hospital staff.

- Women’s Hospital staff are generally not educated enough about the birth certificate process to aid patients or the clerks.

- Due to quick patient turnaround times and an excessive workload, mothers often leave the hospital before all of the documentation is collected.

- Most parents do not have the opportunity to simultaneously apply for social security for their baby due to time constraints. Parents often complain about this shortcoming.

4.2 Prenatal information and impending changes

- Although some of the information required for the birth certificates and demographic data requested by the state is collected as part of the handwritten ob/gyn antepartum records, this information is incomplete and the clerks do not use it to compile the birth certificate. Some of the interview questions could be eliminated by examining patient records, but the clerks would still need to visit the mother’s room. Once there, however, it is faster for them to ask the mother directly. The project team recommends further investigation into the possibility of interviewing the patients on arrival but before delivery.

- Mothers are not currently educated about birth certificate, social security or paternity requirements prior to delivery.

- Ob/gyn and MCIT are currently considering implementing WatchChild, a powerful, customizable UNIX-based commercial software package, to keep track of all hospital prenatal and postnatal information from demographics down to fetal monitoring.

- It is technically feasible to design a printable birth certificate form in WatchChild which would automatically import from existing records most if not all of the required birth certificate information and confidential information requested by the State.
• Even if the capital expenditure for hardware necessary to implement the WatchChild software is approved, the system may not be fully implemented until 1998.

4.3 Benchmarking study

A detailed benchmarking report is included in Appendix B. The study revealed that while each hospital collects identical data, the process for collecting that data varies slightly from hospital to hospital. Because the data collected by this study was purely qualitative in terms of accuracy and timeliness, it is impossible to rate each hospital according to these variables. However, from comments made by the individual supervisors, St. Joseph's Mercy Hospital is the most satisfied with their system. Their reasons for satisfaction are derived mainly from three key aspects of their process:

• Close location of the clerk's office and EBC system to the delivery unit.

• Information meeting for mother's held prior to the delivery to explain the process and begin information collection.

• Increased responsibility and empowerment of the birth certificate clerks.

It is also interesting to note that St. Joseph's has the smallest baby to clerk ratio. This shows that the above three variables significantly affect the efficiency of the process.

5.0 Recommendations

The project team recommends streamlining the birth certificate process in the following ways, ranked by order of impact. Calculations for any estimates of cost savings are included in Appendix F.

5.1 Move the clerk closer to the point of service

The project team strongly recommends moving the clerk's office from B1 Taubman to the 4th floor of the Women's Hospital. This move would eliminate the time spent walking between the Vital Statistics office and the Birth Center. Moving the birth certificate clerk closer to the point of service also facilitates better communication between the clerk, mothers, and nurses. The new birth certificate clerk's workspace would require its own telephone line and minimal space: enough room for one desk, a computer, printer, and file cabinets. According to the travel requirements of the current process, the project team estimates that this move would directly save 109 clerk hours, or $958, annually.
5.2 Collect information on a portable computer

Providing the clerk with a laptop computer and printer on a pushcart would allow the clerk to collect information from the parents, verify it, print the birth certificate, obtain the mother's signature and social security number request all in one step, right in the patient's room. This eliminates the need for multiple visits to the patient's room, along with the time-consuming and error-prone transfer of handwritten data.

Since nearly all mothers would then proofread and sign the birth certificate, the hospital's error rate should drop considerably. Although some errors may still occur, the parents would be responsible for correcting them. In addition to the indirect cost of having a clerk find and correct all documentation, the hospital also pays a $26 fee to the county per error. Based on past error rates, the project team estimates a direct annual savings of $2,808 due to a 90% error reduction.

The laptop PC, battery, adapter, modem, and printer models recommended are detailed in the implementation plan. MCIT quoted the total hardware cost at $1596. This system should be piloted with equipment loaned from MCIT before making the hardware investment.

5.3 Provide information during prenatal care

Currently mothers are not informed about the birth certificate process until after birth. The project team recommends providing prenatal patients with a concise pamphlet about the birth certificate process and requirements, especially emphasizing the requirements for establishing paternity and its importance to the State. UMHS recently received a letter from the State of Michigan Family Independence Agency criticizing the hospital's improved, but still below average, rate for establishing paternity in unwed births. A copy of this letter is included as Appendix G. Both prenatal and maternity ward staff should be informed about the birth certificate and paternity process so that they can assist concerned patients.

5.4 Create legal document for parents who refuse to establish paternity

This document would protect UMHS from State accusations (see Appendix G) by proving that the hospital was not able to establish paternity due to the informed choice of the parents, rather than a lack of effort on the hospital's part.

5.5 Authorize clerks to sign birth certificates

Currently, the practitioners (doctors and certified nurse midwives) and Sandra Hoffman, the birth certificate clerks' supervisor, are authorized to sign the birth certificates. Except for practitioners who are insistent about signing their own, Sandra Hoffman signs most of the hospital's birth certificates. By certifying the clerks to sign them, the process would move more quickly and efficiently. This would be an especially advantageous change if the clerks were relocated to the Birth
Center, as it would eliminate the need for them to return to the Vital Statistics Office for Sandra Hoffman's signature.

5.6 Print business cards for birth certificate clerks

Attaching business cards with the clerks' phone number to any birth certificate information the mothers receive will increase accessibility and visibility to the patients.

5.7 Cross-train maternity ward and birth certificate clerks

In addition to providing a constant availability of expertise for patients and staff, the increased flexibility of the clerks would allow management to schedule staff to better match workload and improve efficiency.

5.8 Create a birth certificate form in the WatchChild system

As mentioned before, WatchChild vendors could easily design a printable birth certificate template that would automatically assimilate all of the data needed. Volume data could then be downloaded directly to the State. If this system is implemented, the only steps required in the birth certificate process would be to interview the mothers and obtain the parents' and authorized signer's signatures after birth.

This job and the responsibility of correcting errors could be integrated with the role of maternity ward clerk. The WatchChild vendor estimates a one-time cost of less than $10,000 to customize the system for birth certificates. As mentioned before, this system will not be implemented for some time, if at all.

6.0 Implementation Action Plan

The project team recommends implementing the suggested process improvements in three chronological phases to ensure a smooth transition. Throughout the implementation process, all involved parties should be educated about the process changes. This education can be accomplished through e-mail, memos, department meetings, one-on-one training or through any other means of effective communication. It is imperative that throughout this process the individuals involved have the opportunity to ask questions, provide suggestions, and voice their opinions. This involvement will minimize confusion and ensure that recommendations are implemented to their full potential for improving patient satisfaction.
6.1 Phase I Recommendations

6.1.1 Move birth certificate clerks closer to point of service.

Ownership: contact Mary Anne Bryant, Department Administrator, Pediatrics

Action Plan:
- Locate available workspace on 4th Floor Women's Hospital that will accommodate desk, computer, printer, and file storage area
- Obtain appropriate authorization for workspace
- Relocate clerks

Results:
- Eliminates unnecessary 14.1 minute trips between Vital Statistics Office and Women's Hospital
- Estimated direct annual savings of 109 clerk hours ($958) due to reduced travel time alone
- Facilitates effective communication between clerks, patients, and nurses

6.1.2 Provide mothers with birth certificate/paternity information in a pre-natal session

Ownership: Clinic nurses and clerks
contact Margaret Hugh, Head Nurse, Ob/gyn clinics

Action Plan:
- Establish pre-natal visit during which the information will be provided
- Instruct and train nurses or clerks to deliver the information to the mothers during their visit
- Provide documentation information including
  a.) description of birth certificate process that occurs after the hospital delivery
  b.) need for establishing paternity/associated benefits
  c.) means for establishing paternity

Results:
- Educates mothers not to leave hospital before providing information to clerk
- Educates unwed mothers about establishing paternity in order to expedite the process and increase paternities, as requested by the State of Michigan
6.1.3 Create a form for mothers who wish to decline paternity establishment

Ownership: Sandra Hoffman, DeNise Crockett, Deshanda Cook

Action Plan:
- Create form stating that the mother has been provided with information about establishing paternity but wishes to decline filling out the affidavit of parentage form against the hospital's advice
- Ask mothers to sign
- Provide to State at end of year to verify that a UMHS has made an effort to increase established paternity levels

Results:
- Verification of concerted effort to increase levels of established paternity at UMHS despite poor statistics

6.1.4 Certify clerks to sign birth certificates

Ownership: Sandra Hoffman

Action Plan:
- Certify birth certificate clerk through County Clerk's Office

Results:
- Eliminates trips to other hospital locations and waiting time incurred while obtaining necessary practitioners' signatures
- Decreases practitioner workload
- Gives clerks greater ownership of process

6.1.5 Print business cards for clerks

Ownership: Sandra Hoffman, DeNise Crockett, Deshanda Cook

Action Plan:
- Send for business cards
- Attach to birth certificate information and correspondence with patients

Results:
- Easily accessible patient contact
6.1.6 Perform a pilot trial using a portable computer and printer

Ownership: Sandra Hoffman, DeNise Crockett, Deshanda Cook, MCIT

Action Plan:
- Contact Scott Larsen, MCIT, at 936-5383 to arrange loan of laptop PC and Deskjet pin-fed printer (outdated)
- Connect hardware and install EBC software onto laptop with MCIT assistance (see Appendix E)
- Collect all information through interviews and eliminate worksheets
- Print out EBC information and have mother validate/sign while in patient’s room

Results:
- Discover and eliminate any unforeseen difficulties before purchasing hardware

6.2 Phase II Recommendations

6.2.1 Purchase hardware and implement

Ownership: Sandra Hoffman, DeNise Crockett, Deshanda Cook, MCIT

Action Plan:
- Contact Brent Albrecht, MCIT, at 764-5591
- Arrange purchase of IBM 365 ED laptop computer with Hayes Acura 14.4K internal modem (see Appendix F)
- Arrange for MCIT to configure hardware and install EBC software (see Appendix E)
- Collect all information through interviews whenever possible and eliminate worksheets
- Print out EBC birth certificate and have mother sign and/or make any necessary corrections while in the patient’s room immediately after interview

Results:
- Eliminates multiple trips to patient’s room
- Eliminates time consuming, redundant, and error-prone handwritten birth certificate forms
- Ensures that mother’s signature appears on birth certificate and that parents can apply for child’s social security
- Reduces cost of errors by allowing mothers to verify certificates
6.2.2 Cross-train birth certificate and maternity ward clerks

Ownership: Sandra Hoffman

Action Plan:
- Provide training sessions
- Establish point contact to deal with problems, answer questions and claim "ownership" of process

Results:
- Increased efficiency and flexibility between clerks.
- Constant availability of expertise to collect information and answer patient questions

6.3 Phase III Recommendations

6.3.1 Integrate birth certificate process into WatchChild system

Ownership: Sandra Hoffman; Joan Robinson, MCIT; Peggy Phillips, MCIT
Ob/gyn and perinatal staff

Action Plan:
- Investigate technical and practical feasibility of importing all birth certificate data from data already collected by WatchChild as part of patient's record
- Investigate how process and staffing can be radically changed to maximize cost reduction
- If UMHS decides to implement WatchChild, contract design of custom birth certificate screen, capable of printing formatted certificates and uploading data to the State.

Results:
- Elimination of redundant information collection
- Elimination of bothersome patient interviews
- Greatly enhanced speed
- Cross-trained staff will be more efficiently utilized
6.3.2 Investigate alternatives for collecting all information prior to delivery if WatchChild is not implemented

Ownership: Pat Warner

Action Plan:
- Assemble project team to further analyze process
- Investigate legal aspects of collecting birth certificate data items prior to delivery
- Investigate logistical practicality of collecting all patient data prior to delivery, so as to ensure no patients slip through the cracks
- Further investigate cost-effectiveness of this approach

Results:
- May find a way to further reduce patient inconvenience
- May reduce costs further
Birth Certificate Process Reengineering

Appendices
Appendix A: Proposed Workplan

<table>
<thead>
<tr>
<th>Week Beginning</th>
</tr>
</thead>
<tbody>
<tr>
<td>23-Sep 30-Sep</td>
</tr>
</tbody>
</table>

I. Proposal Development
   A. Initial Meeting with Pat Warner
   B. Develop Written Project Proposal
   C. Proposal Approval/Sign-off

II. Current Workflow
   A. Data Collection
   B. Staff Interviews
   C. Current Process Flow Development
   D. Develop Method to Monitor Process
   E. Benchmarking (phone survey)
   F. Assessment of Available IT Resources
   G. Observations and Findings

III. Recommendations
   A. Proposed Process Flow
   B. Recommendations
   C. Develop Implementation Plan
   D. Interim Client Meeting
   E. Develop Monitoring Tools

IV. Implementation
   A. Compile Project Report and Drafts
   B. Begin Implementing Process Changes
   C. Report Draft Submitted for Review
   D. Final Client Presentation

* = Client Meetings
Appendix B: Benchmarking Study

B.1 Purpose

A benchmarking study was performed to aid the project team in assessing and considering other means of organization for the birth certificate process. From the study, the project team obtained and/or generated ideas from processes currently in place in these other institutions.

B.2 Approach

Three Michigan hospitals were contacted to obtain information for this study. Birth certificate supervisors at St. Joseph’s Mercy Hospital (Ypsilanti), Munson Medical Center (Traverse City), and Beaumont (Royal Oak) were contacted by phone and questioned about their hospital’s current birth certificate process. The following five main questions were asked in each of these short interviews:

- What was the approximate number of births in 1995?
- Do you utilize the Electronic Birth Certificate system supplied by the state?
- How is the required information for each birth certificate collected?
- What birth certificate information is collected?
- How many clerks do you have employed for the purpose of birth certificate completion?

Along with the data from these questions, various other information was collected from each interview pertaining to each individual process.
B.3 Findings

Findings to four of the previously stated questions can be found in the following table. Information pertaining to how the birth certificate data is collected can be found in the short summaries of each hospital's process that follow.

<table>
<thead>
<tr>
<th></th>
<th>U of M</th>
<th>St. Joseph's</th>
<th>Munson</th>
<th>Beaumont</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Births in 1995</td>
<td>2319</td>
<td>4310</td>
<td>1831</td>
<td>5188</td>
</tr>
<tr>
<td>Utilize EBC?</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Number of Clerks</td>
<td>1.5</td>
<td>1.5</td>
<td>1.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Baby to Clerk Ratio</td>
<td>1546:1</td>
<td>2874:1</td>
<td>1221:1</td>
<td>2076:1</td>
</tr>
<tr>
<td>Data Collected</td>
<td>State Required</td>
<td>State Required</td>
<td>State Required</td>
<td>State Required</td>
</tr>
</tbody>
</table>

B.3.1 University of Michigan Hospital Systems

See Current Process Flow

B.3.2 St. Joseph's Mercy Hospital

Prior to delivery in an educational prenatal visit, the mother's are given a packet of pamphlets and forms which contain information about obtaining their baby's birth certificate. Contained in this packet is the worksheet that must be prepared in order for the clerks to begin processing the birth certificate. The mothers are instructed to read over the information provided and fill out this form if possible prior to their due date. The completed information is then to be brought with them on the day of delivery and collected by the clerk. If the information is not filled out prior to delivery, a clerk will then drop it off and collect it from the mother before her departure from the hospital.

After this information is collected, the mother's are interviewed by the clerks to verify the data provided. Additional state required questions are also asked of the mother. This completed information is then entered into the EBC on a daily basis.
by the clerks. A copy of the information to appear on the birth certificate is then proof-read by the clerks and signed and proof-read by the mothers before being sent out to the county clerk’s office.

The process requires 1.5 clerks to complete efficiently. One full time clerk is always present along with another clerk who spends half her day in the file and retrieval area aiding other staff members. Six other individuals are cross-trained in the birth certificate process to step-in in case of emergency, illness, or vacation time.

St. Joseph’s recently underwent a reengineering effort to streamline the birth certificate process. Two new clerks were hired who were empowered to help make any necessary changes in the implementation process. The office for the clerks containing the EBC System was immediately moved to a location in close proximity to the actual delivery rooms to help eliminate time wasted walking back and forth between the two areas. Since the new clerks were given full responsibility of the accuracy and timeliness of the process, the number of mistakes and ensuing complaints were significantly reduced. The supervisor of this operation is extremely satisfied with the timeliness and accuracy of this process.

**B.3.3 Munson Medical Center**

Prior to delivery in an on-site educational session titled “Maternity Prepared Stay”, the mother’s are given a packet of pamphlets and forms which contain information about obtaining their baby’s birth certificate. The process here on out is very similar to that of St. Joseph’s. Currently, 35% of the mother’s come to delivery with the completed information. A concerted effort is being made to increase this percentage.

The process currently utilizes 1.5 clerks to complete the required tasks. However, Munson is having some difficulties with their current process and are looking into reengineering the operation. They are finding that the process is too lengthy due to the fact that several of the mother’s/father’s are not prepared with the necessary identification information needed for the completion of the birth certificate/paternity papers. (One of the largest difficulties encountered by this department is the signing of paternity papers.) They are currently looking into better methods to gain the required information and are interested in any information and or recommendations the project team may have at the completion of this project.

**B.3.4 William Beaumont Hospital**

The system at Beaumont is similar to that at the University of Michigan Hospital System in that the information and forms are not passed out to the mother until after the baby is born. The information is left with the mother along with a note to have it filled out by the day after delivery at 8:00am in order to be collected by a clerk. The information is then collected and the mothers are interviewed in a similar fashion as at each of the other hospitals. Because of the quick 24 hour discharge time, the clerks are having a very difficult time interviewing each mother before her departure. Many need to be contacted by phone after they have left. This slows the process significantly because it is often difficult or even impossible to reach the mothers.
Beaumont differs from any or the other hospitals contacted in that they do not utilize the state provided EBC system. This also slows their process because information cannot be downloaded directly to the state but rather disks of information from their own system are mailed out.

B.4 Conclusions

The information collected by each of the hospitals is the same. The process by which to collect it varies slightly from hospital to hospital. Because the data collected by this study was purely qualitative in terms of accuracy and timeliness, it is impossible to rate each hospital according to these variables. However, from comments made by the individual supervisors, St. Joseph’s Mercy Hospital is the most satisfied with their system. Their reasons for satisfaction are derived mainly from three key aspects of their process:

• Close location of the clerk’s office and EBC system to the delivery unit
• Information meeting for mother’s held prior to the delivery to explain the process and begin information collection
• Increased responsibility and empowerment of the birth certificate clerks

It is also interesting to note that St. Joseph’s has the smallest baby to clerk ratio. This makes it evident that the above three variables significantly affect the efficiency of the process.

These three changes should be considered for implementation at UMHS.
Appendix C: Birth Certificate Worksheets

C.1 Patient Worksheet

### Information Needed for Completing
Your Child’s Birth Certificate

---

Thank you. Leave at Nurse Desk.

Questions? Call 936-7481.

---

This worksheet is designed to collect the information on the parents that will be needed to prepare the certificate of birth for the child. It will be helpful if you would fill this form out as completely as possible and bring it with you to the hospital when you come to deliver your baby.

Note that a certificate of birth must be filled out completely. Incomplete certificates are not accepted for filing. The information will be used to prepare your child’s birth certificate which is a legal document. The law requires the information be supplied. It is also very important that the information supplied is truthful as supplying false information is against the law.

---

1. **Child’s Name**
   - **(First)**
   - **(Middle)**
   - **(Last)**

2. **Mother’s Name**
   - **(First, Middle, Last)**
   - **(Social Security Number)**
   - **(State of Birth)**
   - **(Country if not USA)**
   - **(Date of Birth)**

3. **Father’s Name**
   - **(First, Middle, Last)**
   - **(Social Security Number)**
   - **(State of Birth)**
   - **(Country if not USA)**
   - **(Date of Birth)**

---

The law specifically stipulates the process for naming the father on a child’s certificate of birth. According to the law, the birth certificate for a child must record the mother’s husband as the father whenever the mother was married at the time the child was conceived. If you were not married at the time of your child’s conception but were married at the time of birth, the individual named as the father is your husband at the time of birth. If you were not married at either time, the father’s name may not be entered without the written consent from the individual to be named as the father. Exceptions to these provisions can occur only through the finding and order of a court.

---

Additional information that will be kept confidential.

11. **Ancestry:** African, Asian, Indian, Black, White, etc.
   - **Race:** American Indian, Black, White, etc.
   - **Education:** (Highest grade completed)

---

**Mother**

12. **Mother’s Mailing Address**
   - **Street Number**, **City or Village, State, ZIP**

**Father**

13. **Home Phone**

---

**Signature of Mother or Informant:**

---

****Note: All birth information must be provided prior to discharge. Leave this form with birth certificate clerk or at nurse station.

---

*Michigan Department of Public Health*

Office of the State Registrar

Center for Health Statistics

Authority: Act 306, PA, 1978*
C.2 Clerk Worksheet

**HOSPITAL WORKSHEET**

<table>
<thead>
<tr>
<th>CHILD: NAME</th>
<th>FIRST:</th>
<th>____</th>
<th>MIDDLE:</th>
<th>____</th>
<th>LAST:</th>
<th>____</th>
</tr>
</thead>
</table>

**SEX**

- Male
- Female

<table>
<thead>
<tr>
<th>Hos. Name:</th>
<th>NOT Hospital, OR Street AND Number</th>
<th>City Village or Town: of Birth</th>
<th>County of Birth:</th>
</tr>
</thead>
</table>

**NAME AND TITLE OF ATTENDANT AT BIRTH IF OTHER THAN CERTIFIER**

- **NAME:**
- **CERTIFIER'S NAME:**
- **TITTLE:**
- **STATE:**

<table>
<thead>
<tr>
<th>MOTHER's NAME: FIRST:</th>
<th>MIDDLE:</th>
<th>LAST:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>FATHER's NAME: FIRST:</th>
<th>MIDDLE:</th>
<th>LAST:</th>
</tr>
</thead>
</table>

**CONFIDENTIAL INFORMATION FOR PUBLIC HEALTH USE ONLY**

<table>
<thead>
<tr>
<th>ANCESTRY: **Native, Puerto Rican, Cuban, Central or South American, Chinese, other races, Anglo-American, Irish, French, German, etc., Native country:</th>
<th>EDUCATION: **Elementary-Senior High, College 1-4 or 5+</th>
</tr>
</thead>
</table>

**MOTHER**

<table>
<thead>
<tr>
<th><strong>NAME:</strong></th>
<th><strong>ADDRESS:</strong></th>
<th><strong>STATE:</strong></th>
</tr>
</thead>
</table>

**FATHER**

<table>
<thead>
<tr>
<th><strong>NAME:</strong></th>
<th><strong>ADDRESS:</strong></th>
<th><strong>STATE:</strong></th>
</tr>
</thead>
</table>

**EXPECTED SOURCE OF PAYMENT FOR MEDICAL SERVICES**

- **Private Insurance, Medicaid, etc.:**

**MEDICAL RECORD NO. OF MOTHER**

**MEDICAL RECORD NO. OF CHILD**

**MONTH OF PREGNANCY:**

**TOTAL PREGNATAL VISITS:**

**LIVE BIRTHS (Do not include still Child):**

<table>
<thead>
<tr>
<th>Name</th>
<th>Number</th>
<th>Number</th>
<th>Name</th>
<th>Number</th>
<th>Number</th>
<th>Name</th>
<th>Number</th>
<th>Number</th>
<th>Name</th>
<th>Number</th>
<th>Number</th>
</tr>
</thead>
</table>

**DEAD:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Number</th>
<th>Number</th>
<th>Name</th>
<th>Number</th>
<th>Number</th>
<th>Name</th>
<th>Number</th>
<th>Number</th>
<th>Name</th>
<th>Number</th>
<th>Number</th>
</tr>
</thead>
</table>

**DATE OF LAST LIVING (MM/YY):**

**DATE OF LAST OTHER TERMINATION (MM/YY):**

**BIRTHWEIGHT (Gestation):**

<table>
<thead>
<tr>
<th>Number</th>
<th>Number</th>
<th>Number</th>
<th>Number</th>
<th>Number</th>
<th>Number</th>
</tr>
</thead>
</table>

**DATE LAST NORMAL MENSTRUAL PERIOD BEGAN (MM/YY):**

**ESTIMATED WEEKS GESTATION:**

**AIRCARS SCORE:**

**TOBACCO USE DURING PREGNANCY:**

- Yes
- No

**NUMBER OF CIGARETTES PER DAY:**

**ALCOHOL USE DURING PREGNANCY:**

- Yes
- No

**NUMBER OF DRINKS PER WEEK:**

**WEIGHT GAINED DURING PREGNANCY:**

**SIGNATURE OF MOTHER OR INFORMANT:**

D-3158 (2002)

AUTHORITY: AHC 368-PA 1978
<table>
<thead>
<tr>
<th>MEDICAL RISK FACTORS</th>
<th>DATE OF BIRTH:</th>
</tr>
</thead>
<tbody>
<tr>
<td>01. Anemia (Hct &lt;10/Hgb &lt;10)</td>
<td>Method of Delivery</td>
</tr>
<tr>
<td>02. Cardiac Disease</td>
<td>Screen - 1</td>
</tr>
<tr>
<td>03. Acute or Chronic Lung Disease</td>
<td>18. Vaginal</td>
</tr>
<tr>
<td>04. Diabetes</td>
<td>19. Vaginal After Prev C-Section</td>
</tr>
<tr>
<td>05. Genital Herpes</td>
<td>20. Primary C-Section</td>
</tr>
<tr>
<td>06. Hydramnios/Oligohydramnios</td>
<td>21. Repeat C-Section</td>
</tr>
<tr>
<td>07. Hemoglobinopathy</td>
<td>22. Forceps</td>
</tr>
<tr>
<td>08. Hypertension, Chronic</td>
<td>23. Vacuum</td>
</tr>
<tr>
<td>09. Hypertension/Pregnancy Assoc</td>
<td></td>
</tr>
<tr>
<td>10. Eclampsia</td>
<td></td>
</tr>
<tr>
<td>11. Incompetent Cervix</td>
<td></td>
</tr>
<tr>
<td>12. Previous Infant 4000 + grams</td>
<td></td>
</tr>
<tr>
<td>13. Previous Preterm or SGA</td>
<td></td>
</tr>
<tr>
<td>14. Renal Disease</td>
<td></td>
</tr>
<tr>
<td>15. Rh Sensitization</td>
<td></td>
</tr>
<tr>
<td>16. Uterine Bleeding</td>
<td></td>
</tr>
<tr>
<td>17. None</td>
<td></td>
</tr>
<tr>
<td>18. Other</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OBSTETRIC PROCEDURE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>19. Amniocentesis</td>
<td></td>
</tr>
<tr>
<td>20. Electronic Fetal Monitoring</td>
<td></td>
</tr>
<tr>
<td>21. Induction of Labor</td>
<td></td>
</tr>
<tr>
<td>22. Simulation of Labor</td>
<td></td>
</tr>
<tr>
<td>23. Tocolysis</td>
<td></td>
</tr>
<tr>
<td>24. Ultrasound</td>
<td></td>
</tr>
<tr>
<td>25. None</td>
<td></td>
</tr>
<tr>
<td>26. Other</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMPLICATIONS AND METHOD OF DELIVERY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01. Febrile (&gt;100 F or 38°C)</td>
<td></td>
</tr>
<tr>
<td>02. Meconium, Mothereas/Heavy</td>
<td></td>
</tr>
<tr>
<td>03. Premature Rupture (&gt;12 hrs)</td>
<td></td>
</tr>
<tr>
<td>04. Abruptio Placenta</td>
<td></td>
</tr>
<tr>
<td>05. Placenta Previa</td>
<td></td>
</tr>
<tr>
<td>06. Other excessive Bleeding</td>
<td></td>
</tr>
<tr>
<td>07. Siezures During Labor</td>
<td></td>
</tr>
<tr>
<td>08. Precipitous Labor (&lt; 3 hrs)</td>
<td></td>
</tr>
<tr>
<td>09. Prolonged labor (&gt; 20 hrs)</td>
<td></td>
</tr>
<tr>
<td>10. Dysfunctional Labor</td>
<td></td>
</tr>
<tr>
<td>11. Breach/Malposition</td>
<td></td>
</tr>
<tr>
<td>12. Cephalocephic Disproportion</td>
<td></td>
</tr>
<tr>
<td>13. Cord Prolapse</td>
<td></td>
</tr>
<tr>
<td>14. Anesthetic Complications</td>
<td></td>
</tr>
<tr>
<td>15. Fetal Distress</td>
<td></td>
</tr>
<tr>
<td>16. None</td>
<td></td>
</tr>
<tr>
<td>17. Other</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ABNORMAL CONDITIONS OF NEWBORN</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01. Anemia (Hct &lt;39/Hgb &lt;13)</td>
<td></td>
</tr>
<tr>
<td>02. Birth Injury</td>
<td></td>
</tr>
<tr>
<td>03. Fetal Alcohol Syndrome</td>
<td></td>
</tr>
<tr>
<td>04. Hyaline Membrane Disease/RDS</td>
<td></td>
</tr>
<tr>
<td>05. Meconium Aspiration Syndrome</td>
<td></td>
</tr>
<tr>
<td>06. Assisted Ventilation &lt;10 min</td>
<td></td>
</tr>
<tr>
<td>07. Assisted Ventilation &gt;= 30 min</td>
<td></td>
</tr>
<tr>
<td>08. Seizures</td>
<td></td>
</tr>
<tr>
<td>09. None</td>
<td></td>
</tr>
<tr>
<td>10. Other</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONGENITAL ANOMALIES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Anencephalus</td>
<td></td>
</tr>
<tr>
<td>12. Spina Bifida/Meningocele</td>
<td></td>
</tr>
<tr>
<td>13. Hydrocephalus</td>
<td></td>
</tr>
<tr>
<td>14. Microcephalus</td>
<td></td>
</tr>
<tr>
<td>15. Other CNS Anomaly:</td>
<td></td>
</tr>
<tr>
<td>16. Heart Malformations</td>
<td></td>
</tr>
<tr>
<td>17. Other Circ./Resp. Anomaly:</td>
<td></td>
</tr>
<tr>
<td>18. Rectal Atresia/Semiosis</td>
<td></td>
</tr>
<tr>
<td>19. Trach/Eso/Fistula/Atresia</td>
<td></td>
</tr>
<tr>
<td>20. Omphalocoe/Gastrochisis</td>
<td></td>
</tr>
<tr>
<td>21. Other Gastrointestinal:</td>
<td></td>
</tr>
<tr>
<td>22. Malformed Genitalia</td>
<td></td>
</tr>
<tr>
<td>23. Renal Agenesis</td>
<td></td>
</tr>
<tr>
<td>24. Other Urogenital:</td>
<td></td>
</tr>
<tr>
<td>25. Cleft Lip/Palate</td>
<td></td>
</tr>
<tr>
<td>26. Polydactyly/Syndactyly/Adactyl</td>
<td></td>
</tr>
<tr>
<td>27. Club Foot</td>
<td></td>
</tr>
<tr>
<td>28. Diaphragmatic Hernia</td>
<td></td>
</tr>
<tr>
<td>29. Other Musculoskeletal/Integ.:</td>
<td></td>
</tr>
<tr>
<td>30. Dow's Syndrome</td>
<td></td>
</tr>
<tr>
<td>31. Other Chromosomal:</td>
<td></td>
</tr>
<tr>
<td>32. No Congenital Anomalies</td>
<td></td>
</tr>
<tr>
<td>33. Any Other Congenital Anomaly:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C.2 Clerk Worksheet (cont.)</th>
<th></th>
</tr>
</thead>
</table>
Appendix D.1: Current Birth Certificate Process

1. **In Medical Information (MIS)**
   - Check A/D/T (Pavilion D) for births the previous 24 hours
   - Dupe screen and highlight

2. **In Labor & Delivery (L&D)**
   - Check L&D delivery log and pick up blue worksheets

3. **In Women's Hospital**
   - Note phone and room number on blue worksheet. Abstract information from chart onto blue worksheet

4. **In Patient's Room**
   - Is patient available?
     - **no**: Revisit later or telephone/write at a later date
     - **yes**: Interview and give instructions to patient to fill out forms in folder left by nursing

5. **Are paternity papers necessary?**
   - **yes**: Instruct mother and father to fill out forms
   - **no**
In MIS

- Take blue worksheet to MIS for processing

In Patient's Room

- Print Birth Certificate from EBC
- Enter on log and type birth certificate
- Have patient verify accuracy of information on typed birth certificate
- Is patient leaving immediately?
  - yes: Error(s)?
    - yes: Make corrections
    - no: Obtain patient signature
  - no: Error(s)?
    - yes: Make corrections
    - no: Obtain patient signature

In Women's Hospital or MIS

- Have certifier (ie CNM, MD, ART) review birth certificate for accuracy
- Error(s)?
  - yes: Make corrections
  - no: Mail birth certificates to Michigan Department of Public Health
- Group paternity papers by county and mail out to County Clerk
Appendix D.2: Proposed Birth Certificate Process

(Nurses) Explain Birth Certificate process to mothers during prenatal visit

In Labor & Delivery (L&D)
Check L&D delivery log

In Women's Hospital
Note phone and room numbers of mothers. Abstract information from chart into EBC.

In Patient's Room
Is patient available?

no
Revisit later or telephone/write at a later date

yes
Interview and enter necessary EBC information using laptop computer

Are paternity papers necessary?

no

yes
Instruct mother and father to fill out forms
Print Birth Certificate from EBC

Have patient verify accuracy of information on typed birth certificate

Error(s)?
- yes → Make corrections
- no → Obtain patient signature/clerk signature

Proof-read printed birth certificates

Error(s)?
- yes → Make corrections
- no → Mail birth certificates to Michigan Department of Public Health

In Office

Group paternity papers by county and mail out to County Clerk
Appendix E:  EBC Software Description

Features of the Electronic Birth Certificate System

The Electronic Birth Certificate Software (EBC) is currently installed in 54 Michigan hospitals. These hospitals are of various sizes (500 - 10,000 births). The cost to the hospital involves hardware equipment only (see attached). Software for this program will be purchased by the State (approximately $1,000) with no cost to the hospital. Advantages to the hospitals include:

- EBC allows the operator to enter and print the legal portion of the certificate (top portion) in time to get the mother's signature. This is especially helpful in larger hospitals with high volumes of births.

- Only the legal portion of the certificate is printed thus emphasizing confidentiality. Completed birth data is then transferred directly to the State via a modem.

- Dictionaries are used to store countries, states, Michigan towns/cities/counties, and certifiers' information for automatic retrieval into the birth certificate. This eliminates keystrokes and the possibility of typing errors.

- Corrections or additions to certificates (paternity etc.) can be done easily by retrieving the record and updating information without retyping the whole certificate. Certificates can then be reprinted if necessary.

- Forms such as hospital birth verifications, paternity, etc. can also be created and printed for each child using the report generator.

- Reports can be generated using the stored EBC information for each child through the Custom Report Generator. This can be used for documentation such as birth logs or for statistical information such as low birth weights.

- Database developed in reporting births will mirror data held by state and can be exported to ASCII data files.

- The system has a method for tracking records sent to the city/county clerk's office.

- By using EBC software, hospitals may be providing a service to some mothers through the local county health departments. Various local county health departments have requested EBC birth data from our Registration Unit. County Health Departments are then able to follow up on high-risk babies who are residents of the county.

- System can be used for reporting of fetal deaths and/or birth defects.

The birth certificate forms come as pin-fed (tractor feed) paper. Only the legal portion of the certificates will be printed. This means work sheets must be filled out by mother before a
Appendix E: EBC Software Description

certificate can be typed. Once the legal portion is printed, you will need to get two signatures: Mother and Physician (or other certifier). The physician must complete the medical portion of the work sheet and other applicable items in order for the computerized record to be completed. For some hospitals, this is a total change from their present birth certificate routine.

Assistance in operating the system is provided by Vital and Health Records staff from 8:00 a.m. to 4:30 p.m., Monday through Friday. When immediate attention is needed after working hours, Genesis Systems Corporation in Pennsylvania will assist your hospital 24-hours a day.

Future enhancements being considered for future development include:

- Ability to download data to MDPH and have SSA cards delivered to the parents very rapidly with an average delivery time of 30 days.
- Integrated telecommunications to permit more efficient data downloads
- An ability to import information into the system from other data files such as admitting data
- Possible development of a networking capability to allow for multiple simultaneous users.
- Addition of a feature to permit the hospital to include additional customized information in the data set.
Appendix E: EBC Software Description

EQUIPMENT AND SOFTWARE REQUIREMENTS

1) IBM XT/AT or compatible computer
   Must have one serial and one parallel port
   or
   Two serial ports

2) 40 Megabytes Minimum Hard Drive. Additional space may be needed based on the following formula:
   
   \[ (# \text{ of records per year} \times 2,047 \times 2) + 8,000,000 \]

3) 1 Megabyte of Random Access Memory (minimum)

4) One floppy drive (minimum)
   May be 5.25" or 3.5" floppy
   May be formatted to 360K, 720K, 1.2, or 1.4M

5) Hercules (compatible) monochrome video card or
   Optional color monitor and color card

6) Hayes or Hayes compatible 9600 baud modem

7) Carbon Copy Plus telecommunications software

8) Letter Quality or Near Letter Quality printer
   MUST BE PIN FED (Tractor Feed)
   Must be 132 column
   Must print 12 pitch (12 cpi)
   Optional Sheet Feeder
   If a dot matrix, must be 18 or 24 pin or print emphasized or double strike in 12 pitch.
   (Compatible dot matrix printers include Okidata, Epson LQ1050, Panasonic KX-1624, IBM Proprinter.)

9) EBC software and maintenance

10) Available telephone line for telecommunications (direct dial).

11) DOS version 3.1 or higher

Software is supplied to each facility by the Department of Public Health, Office of the State Registrar.
Appendix F: Cost Estimates

Medical Information, Vital Statistics Clerk pay rates

<table>
<thead>
<tr>
<th></th>
<th>bi-weekly pay</th>
<th>hours per week</th>
<th>hourly pay</th>
<th>annual pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>clerk 1</td>
<td>$375.85</td>
<td>20</td>
<td>$9.40</td>
<td>$9,208</td>
</tr>
<tr>
<td>clerk 2</td>
<td>$327.52</td>
<td>20</td>
<td>$8.19</td>
<td>$8,024</td>
</tr>
<tr>
<td>average</td>
<td>$351.69</td>
<td>20</td>
<td>$8.79</td>
<td>$17,233</td>
</tr>
</tbody>
</table>

Direct cost of travel time

<table>
<thead>
<tr>
<th>travel time</th>
<th>(round trip)</th>
<th>14.1 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>births/year</td>
<td>2,319</td>
<td></td>
</tr>
<tr>
<td>travel time/year</td>
<td>109 hours</td>
<td></td>
</tr>
<tr>
<td>avg.clerk wage</td>
<td>$8.79 per hour</td>
<td></td>
</tr>
</tbody>
</table>

annual cost savings $958
* assuming clerk makes 2 round trips per 10 births

Direct cost of errors

| births          | 2,319         |
| error rate      | 5%            |
| errors per year | 120           |
| cost per error  | $26           |

annual cost of errors $3,120

Computer hardware acquisition costs

| computer        | IBM Thinkpad 365 ED $1,500.00 |
|                 | 540MB hard drive         |
|                 | 10.4” screen             |
| battery/adaptor | included with computer   |
| modem           | Hayes Accura 14.4 data/fax $95.66 |
|                | internal modem           |
| printer         | used Deskjet tractor fed model $|

total $1,595.66
*prices quoted by MCIT, available as of 12/9/96
Appendix G: State of Michigan Request to Establish More Paternities

SEP 23 1995

FAMILY INDEPENDENCE AGENCY
OFFICE OF CHILD SUPPORT
7109 W SAGINAW HWY, PO BOX 30478, LANSING MI 48909-7978
GERALD H. MILLER, Director

September 13, 1996

Mr. John Forsyth, Administrator
University of Michigan Hospital
1500 E. Medical Center Dr.
Ann Arbor, MI 48108-0001

Dear Mr. Forsyth:

This letter provides information on the progress of your hospital's paternity acknowledgment program as well as outlines some changes in law that will occur beginning July 1, 1997.

You may recall, starting January 1, 1994 all birthing hospitals were required to offer to unwed parents an opportunity to acknowledge paternity as part of the birth registration process. Prior to this, a number of hospitals were offering paternity acknowledgment services to unwed parents. Hospital training was provided in the fall/winter of 1993. At that time, hospitals were told that we would provide feedback once we received data from the Department of Community Health (previously Public Health). Below are the statistics on your hospital's progress.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Births</th>
<th>Unwed Births</th>
<th>Paternities Established</th>
<th>% Paternities Established</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>2188</td>
<td>541</td>
<td>172</td>
<td>31.79%</td>
</tr>
<tr>
<td>1994</td>
<td>2218</td>
<td>594</td>
<td>283</td>
<td>47.64%</td>
</tr>
<tr>
<td>1995</td>
<td>2338</td>
<td>528</td>
<td>253</td>
<td>47.82%</td>
</tr>
</tbody>
</table>

During 1995, your hospital had 528 (22.58%) unwed births. We have compared your hospital with other hospitals with similar unwed birth rates—ranging from 7 to 25%. On an average, your group of hospitals established paternity for 64.50% of their unwed births. Your hospital is lower than the average for hospitals having similar numbers of unwed births. You can see from the statistics above the changes in your hospital's effort. More babies are linked with their biological fathers than before because of your hospital's efforts. Your hospital is in the best position to determine what factors prohibit your staff from more fully assisting unwed parents in establishing paternity.

In the very near future, we will be meeting with various hospitals to determine what does and does not work in getting unwed parents to establish paternity. We would like any suggestions you may have where we can be of help in increasing your hospital paternity establishment rate.

The state as a whole has increased paternity establishments from 26.47% in 1993 to 44.89% in 1995. We are hoping to continue to increase hospital paternity establishments statewide through public outreach efforts. The issue of paternity establishment is a key issue in the philosophy of personal responsibility. Personal responsibility is a focal point of welfare reform recently passed...
by Congress. (Federal Welfare Reform requires every state to establish paternity for 90% of unwed parents.) We are encouraging hospitals to develop and/or enhance efforts to build information about establishing paternity into prenatal classes and clinics. This way, unwed parents are fully informed about the importance and benefits of establishing paternity, and can discuss the situation during the pregnancy and be prepared to sign paternity papers at birth in the hospital. We are working with the Michigan Academy of Family Physicians in providing information in doctor's offices. We are open to any comments or suggestions your hospital may have that would be helpful in the effort to continue to increase the paternity establishment rate.

We are hopeful that some recent changes in legislation will increase paternity establishments. The changes include:

- The state must establish a central paternity registry that will contain information on all paternities established. This registry will be housed at the Department of Community Health.
- The acknowledgment must be notarized. (The acknowledgment will no longer require two witnesses' signatures.)
- The acknowledgment (original) will be mailed to the Local Registrar who then forwards to the Office of Vital Statistics, Department of Community Health. (The acknowledgment will no longer be mailed to the Probate Courts)
- The acknowledgment form will contain rights and responsibilities of unwed parents.
- Upon signing the acknowledgment form, custody is granted to the mother unless otherwise agreed to in writing by the parties or ordered by the court.
- The mother and father must be provided with a copy of the acknowledgment form upon signing.

Your hospital will be provided with the information, revised forms, and brochures prior to July 1997.

This is where the hospital paternity program stands today. You can be proud of your hospital's success in providing this valuable service to the population you serve. It is a service valuable not only to newborn children and your patients, but also to the community and the taxpayers of Michigan. Thank you for the involvement and commitment of all staff involved in this paternity establishment effort.

If you have any suggestions or questions, please call us at (517) 373-7570.

Sincerely,

Wallace N. Dutkowsi, Director
Office of Child Support

cc Medical Records
Office of the State Registrar
MEMORANDUM

TO: Barb Dubler  
Sandra Hoffman  
Margaret Hough

FROM: Pat Warner  
Associate Hospital Director

DATE: January 8, 1997

SUBJECT: Birth Certificate Process

The Industrial and Operations Engineering Project, "Birth Certificate Process Re-engineering" was very successful. The final report has been presented and I believe each of you has a copy. If not, call and we can get you one.

I am very interested in implementing the recommendations. Thus, I ask that Sandra Hoffman provide overall leadership for coordinating implementation with the following responsibilities outlined below:

**Barb Dubler:**

- Locate a work space on Birth Center floor where the birth certificate clerk can have access to a computer and some file storage.

- Work with Sandra Hoffman to cross-train birth certificate and maternity ward clerks.

**Margaret Hough and Candy Laughlin:**

- Create a consistent mechanism to provide mothers with birth certificate/paternity information in the pre-natal visit process. An evaluation of effectiveness should be included.

**Sandra Hoffman:**

- Create a form for mothers who wish to decline paternity establishment.

- Obtain certification for clerks to sign birth certificates.
Memorandum to Barb Dubler, Sandra Hoffman, Margaret Hough  
January 8, 1997  
Page 2

- Print business cards for the clerks:

- Perform a pilot trial using a portable computer and printer.

- Initiate work with MCIT to purchase hardware and implement system.

- Cross-train birth certificate and maternity ward clerks.

- Coordinate with Peggy Phillips and Joan Robinson to integrate birth certificate process into WatchChild System.

- Initiate a patient and provider on-going feedback/satisfaction system.

I appreciate all of your work and ask that you implement the pilot by February, 1997. Please let me know if you have questions or need support.

PAW/kls

cc: Richard Coffey  
Denise Fleming  
Tim Johnson, M.D.  
Beverly Jones  
Chrislan Manuel  
Carol Spengler  
Rosanne Whitehouse