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# FISCAL NOTE

STATE OF ALASKA  
2005 LEGISLATIVE SESSION

Fiscal Note Number: 2  
 Bill Version: CSSB 22(FIN)  
 ( S ) Publish Date: 5/03/05  
 Dept. Affected: Health & Social Services

Revision Date/Time (Note if correction): Rev 4/27/05 12:30p

Title: ADDING BIRTH CENTERS TO FACILITIES PAID BY MEDICAID  
 RDU: Health Care Services  
 Component: Medicaid Services

Sponsor: DAVIS

Requester: \_\_\_\_\_ Component No. 2077

**Expenditures/Revenues** (Thousands of Dollars)

Note: Amounts do not include inflation unless otherwise noted below.

OPERATING EXPENDITURES	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Personal Services						
Travel						
Contractual						
Supplies						
Equipment						
Land & Structures						
Grants & Claims						
Miscellaneous						
<b>TOTAL OPERATING</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

<b>CAPITAL EXPENDITURES</b>						
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<b>CHANGE IN REVENUES (0)</b>						
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**FUND SOURCE** (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1037 GF/Mental Health						
Other(Specify Type-do not abbreviate)						
Other(Specify Type-do not abbreviate)						
<b>TOTAL</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

Estimate of any current year (FY2005) cost: \_\_\_\_\_

Mark this box (X) if funding for this bill is included in the Governor's FY 2006 budget proposal:

**POSITIONS**

Funding						
Positions						
Temporary						

**ANALYSIS:** (Attach a separate page if necessary)

There is a great deal of uncertainty in calculating the cost differential between birth center and hospital births. There are potential savings and costs, but with the large number of variables involved, we cannot determine the net amount. Therefore, the fiscal note is for zero dollars. The number of Medicaid eligible women who might choose a birthing center instead of a hospital is unknown. In Alaska, about 2% of all births occur in a birthing center compared to less than 1% nationally. The rate of Medicaid deliveries in birthing centers would probably be lower than the statewide rate since birthing centers do not provide adequate care for high-risk pregnancies. Medicaid babies are generally the most at-risk because of their circumstances. An independent study found that the facility cost for a birthing center delivery is about 22% less than a hospital. The cost savings for 100 births is approximately \$40,000.00.

(Continued on page 2)

Prepared by: Janet Clarke, Assistant Commissioner Phone: 465-1633  
 Division: Finance and Management Services Date/Time: 03/30/2005  
 Approved by: Joel S. Gilbertson, Commissioner Date: 04/28/2005  
 Agency: Department of Health and Social Services

FISCAL NOTE  
FN # 2

STATE OF ALASKA  
2005 LEGISLATIVE SESSION

BILL NO. CSSB 22(FIN)

ANALYSIS CONTINUATION

If a serious complication resulted in the mother's or baby's transfer to a hospital, there would be additional costs which would reduce and possibly offset any savings. The birthing center would still be paid it's facility fee and the hospital would be paid a facility fee as well. Additionally, if emergency transport was required, those costs would have to be factored in. In contrast, a hospital birth with serious complications would not incur the birthing center fee or the transport fee.

There is a question whether birthing centers are an allowable federal Medicaid service. If birthing centers do not qualify for Medicaid reimbursement, the cost would be all GF. If they do qualify, the regular matching rate would apply.

# Alaska State Legislature

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## Senator Bettye Davis

### Senate Bill 22

" An Act adding birthing centers to the list of health facilities eligible for payment of medical assistance for needy persons."

### Sponsor Statement

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***Currently in Alaska, Medicaid does not cover licensed birthing center facility fees, often forcing pregnant women to choose a hospital birth where costs to the state are significantly greater than those at a birthing center. The average cost from four hospitals in Anchorage, Fairbanks and Juneau of a "natural" birth is \$3,667.00. This figure does not include epidural anesthesia or the use of pitocin to enhance the strength of labor, internal fetal monitoring and forceps or vacuum assisted deliveries. A cesarean section on average would cost an additional \$4,385.75. The facility fees for three birthing centers in Alaska averages \$1,400.00.***

***If birthing center facility fees were to be reimbursed by Medicaid or Denali KidCare, the option of a birth center birth could be made available to even more women. It's a logical step towards saving the state money and allowing families on the Denali KidCare program to choose their preferred location to give birth. I urge you to support the passage of this legislation***

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## Senator Bettye Davis

### Memorandum

To: Member, House Finance Committee  
From: Senator Bettye Davis  
Date: May 8, 2005  
RE: Senate Bill 22

The following figures illustrate the state's likely cost savings by passing SB 22, making birth center facility fees a qualified expense under Medicaid. Based on testimony from the Department of Health & Social Services, these numbers assume the federal government will refuse to participate, requiring the state to pay the facility fee from state funds. Although this does not take into account the raising of Midwives' fees, the state still saves money.

#### Birth Center Costs:

Facility	City	Cost of care	Facility Fee	Newborn Care	Grand Total
The Midwives BC	Anchorage	\$3665	\$1200	\$390	\$5255
Geneva Woods BC	Anchorage	\$4225	\$1500	\$610	\$6335
AK Family Health & BC	Fairbanks	\$4220	\$1600	\$615	\$6435
Juneau Family BC	Juneau	\$4200	\$1800	\$818 <sup>5 exams</sup>	\$6818
Mat-Su Midwifery	Wasilla	\$4251	\$1800	\$517	\$6568
Woman's Way Midwifery	Soldotna	\$3400	\$1250	\$650	\$5300
Frontier Midwifery	Soldotna	\$3650	\$1200	\$580	\$5430

"Cost of care" includes prenatal, postpartum, and birth charges. It excludes labs. "Newborn Care" includes immediate care at delivery and four newborn exams, except where noted.

MD/OB Costs:

City	MD/OB Cost	Notes
Anchorage	\$5100	
Anchorage	\$4600	Includes postpartum
Anchorage	\$4358	
Wasilla	\$3700	includes postpartum
Wasilla	\$3685	7-9 prenatal visits
Soldotna	\$3082	
Soldotna	\$2940	Includes labs and ultrasound
Homer	\$2940	

Except where noted, "MD/OB costs" include 10 prenatal visits, but do not include labs, postpartum maternal care, or immediate (at delivery) newborn care.

Hospital Costs:

City	Cost of 1 day stay	Routine Nursery Care	Epidural
Anchorage	\$4000		\$2000
Anchorage	\$3932	\$575 per night	
Fairbanks	\$3200	\$900-\$1800	\$3200
Juneau	\$3200 (approx)		
Soldotna	\$5000-\$7000	\$1800-\$2500	

These numbers understate hospital birth costs by excluding charges such as oral or topical pain medications, episiotomy, perineal repair, fetal monitoring, or hospital materials charges (e.g.: gloves, gauze, sterile bedclothes, etc). Birthing centers either do not perform or do not charge separately for these.

Grand Totals and cost to the state:

City	Hospital Grand Totals (low)	Hospital Grand Totals (high)	Hospital Medicaid (GF only) low	Hospital Medicaid (GF only) high	Bcenter Medicaid (GF only) low	Bcenter Medicaid (GF only) high
Anchorage	\$9,365	\$10,175	\$4,683	\$5,088	\$3,228	\$3,918
Fairbanks	\$8,585	\$9,500	\$4,293	\$4,750	\$4,018	
Juneau	\$8,285	\$9,200	\$4,143	\$4,600	\$4,309	
Wasilla	\$9,017	\$10,000	\$4,509	\$5,000	\$4,184	
Soldotna	\$10,240	\$13,082	\$5,120	\$6,541	\$3,275	\$3,315

Chart assumes a 25% epidural rate in hospitals. National average is 40% for small hospitals, 66% for large.

Where epidural cost is not available for a city, the Anchorage rate was used.

Where any other cost was unavailable for a given city, the statewide median was used.

Chart assumes the federal government pays 50% of all hospital charges

Chart assumes the federal government pays 50% of all birthing center charges except the facility fee, in which the federal government may not participate. This chart therefore assumes birthing center facility fees are 100% GF.

**Special Note:**

Since the original hearing on this bill:

As amended by the Senate Finance CS, the bill now has a provision that only allows the state to implement the program if the federal government authorizes coverage under a new amended state plan for items covered under Medicaid. The department of Health & Social Services is charged

with submitting an amended plan in order to receive an answer from CMS (Centers for Medicare & Medicaid) on this issue. If they deny the request, we will have two possible methodologies in order to accomplish the desired result of covering the facility fees for Birthing Centers.

The Legislature can authorize HSS to fund it entirely through GF. We might also raise the rates paid to midwives who use Birthing Centers to reflect the cost of that use.

The following information has been gathered and presented in this form for your information and use on that issue:

Senator Murkowski has received correspondence from constituents who are interested in the passage of SB 22. She has received the following information from the Congressional Liaison Office of Department of Health and Human Services Centers for Medicare and Medicaid Services (CMS), which she is sending to the constituents:

*Medicaid does not provide reimbursement of stand-alone birthing centers. They are not a 1905 recognized provider. Medicaid does reimburse nurse-midwives. However, the state can authorize a higher reimbursement to midwives who can then split their fee with their facility. Payment must be recognized to be on behalf of the recognized provider -- the midwife.*

*Nurse mid-wife services are recognized under section 1905(a)(17) of the SSA.*

*In general, states determine provider reimbursement rates but they must meet the payment requirements of section 1902(a)(30(A) which requires that payments are consistent with efficiency, economy, and quality of care.*

*While CMS wouldn't match payments above a provider's actual costs, we would recognize the costs to the nurse midwife of providing services in a birthing center, which might include the administrative, and other reasonable costs associated with practicing in these centers, thus the higher reimbursement rate.*

If the Centers for Medicare and Medicaid Services feel this would be appropriate, I would like to see the department look into this possibility if both CMS and the Legislature do no act in a positive manner.

Patricia W. Stone  
Patricia Hinton Walker

# Cost-Effectiveness Analysis: Birth Center vs. Hospital Care

Increasingly nursing will need to prove the cost effectiveness of alternative models of care. A cost-effectiveness analysis, using a decision analysis format, compared a birthing center to a hospital for low-risk deliveries. Results indicate that a birth center is a cost-effective model of nursing care.

There is increasing emphasis and interest in the economic evaluation of health care. There is a great deal of confusion about the labels (cost-effectiveness analysis or cost-benefit analysis) and sometimes the methodologies used to evaluate programs or treatment alternatives from an economic perspective. In the past, many of these economic studies have been conducted by economists or medical researchers; however, more studies need to be conducted by nurses to measure the impact of care provided by nurses. Dumas (1993) indi-

cates that nurses with advanced practice preparation (such as midwives, nurse practitioners, and clinical specialists) must continue to demonstrate the capability to provide high-quality, cost-effective care. She further states that, "Nurses are powerful resources for health care reform. But the full impact of their capabilities has yet to be realized. . ." (p. 311). Studies evaluating alternative approaches to care provided by advanced practice nurses (APNs) such as nurse practitioners (NPs) and certified nurse midwives (CNMs) are critical for the advancement of the nursing profession. "The remaining questions in any assessment of NPs' and CNMs' current and potential contributions to alleviating pressing health problems, of course, is cost effectiveness" (Safriet, 1992, p. 434).

What is cost-effectiveness analysis? How does this differ from cost-benefit analysis? What are the methodologies used to

evaluate the economic effectiveness of a particular program or choice for care? In cost-effectiveness analysis, according to Drummond, Stoddart, and Torrance (1987), both the costs and the consequences of specific health programs or treatments are examined. Weimer and Vining (1992) identify two ways to measure cost effectiveness: "The first method is to choose a given level of expenditures (say \$10 million) and find the policy alternative that will provide the greatest benefits... The second method is to specify a given level of benefit (however defined) and then to choose the policy alternative that achieves the benefit at the lowest cost" (p. 197). Cost-benefit analysis, on the other hand, is a technique used to systematically estimate the efficiency affects of policies, usually with everything reduced to dollars. According to Weimer and Vining (1992), "Its appropriateness as a decision rule depends on whether

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efficiency is the only relevant value and the extent to which important impacts can be monetized" (p. 239). To summarize, the distinction between cost effectiveness and cost benefit is subtle, but important. Sox, Blatt, Higgins, and Marton (1988) state that, "Cost-benefit analysis provides a means for deciding if a program is worth undertaking at all. Cost-effectiveness analysis is a method for comparing several strategies whose benefits can be measured in the same units. Costs are usually measured in units of currency and benefits are measured in clinical measures such as quality outcomes" (p. 329).

Cost-effectiveness analysis is the form of economic evaluation presented in this article and the particular methodological approach used is decision analysis. There is more than one method used to measure cost effectiveness. Two common methodological approaches to estimate potential cost savings have previously been highlighted in the literature: MD-replacement and relative-cost ratios to derive a dollar amount of saving from hypothetical replacement of physicians by NPs have been computed (McGrath, 1990; Poirier-Elliott, 1984; Touger & Butts, 1990); and Nichols (1992) used a more sophisticated methodology, estimating actual costs of inefficient use of primary care NPs.

Further research that examines the cost-effective analysis of a mix of APNs and MDs in various types of practice settings, in types of newly emerging health care delivery systems (such as birthing centers), and with specific patient populations (such as low-risk mothers) is needed. The purpose of this article is to present a cost-effectiveness analysis of a birthing

center versus hospitalization for maternity care of low-risk mothers.

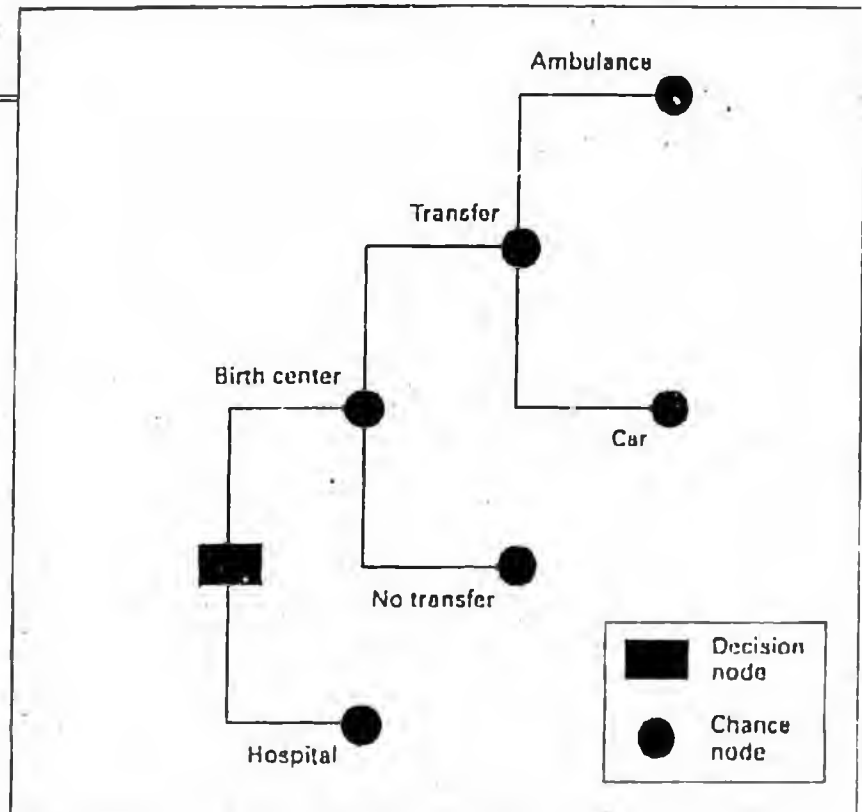
**Alternative Childbirth Facility**

Freestanding community birth centers are a relatively new phenomenon. A birth center is a diagnostic and treatment center organized to provide care to low-risk mothers during pregnancy, labor, and delivery, and who require a stay of less than 24 hours after birth. Currently CNMs are the dominant providers of intrapartum care at birth centers (Declercq, 1993). Many researchers have found CNMs to provide safe prenatal and intrapartum care to the low-risk pregnant women (Brown & Grimes, 1993; Buhler, Glick, &

Sheps, 1988; Levy, Wilkinson, & Marino, 1971; MacVicar et al., 1993; Mayes et al., 1987; Office of Technology Assessment, 1986; Scupholme, DeJoseph, Strobino, & Paine, 1992; Thompson, 1986). At a birth center, the CNM, with physician back-up if needed, provides care to low-risk women during pregnancy and stays with her during labor from the time of admission to the birth center through the immediate postpartum period. The philosophy of a birth center is to view childbirth as a natural process with an emphasis on preventive care.

Increasingly women are choosing less interventive approaches to childbirth (Inforum, 1991). In 1989

Figure 1.  
The Decision Identified



in the United States, 14,273 infants were born in freestanding birth centers (Declercq, 1993). Responding to growing interest in finding innovative ways to provide quality health care that is cost effective, and to this increased market for less interventive childbirth, many health corporations are considering opening a community birth center. Administrative reasons for opening an alternative childbirth facility include providing economical and safe health care during pregnancy, birth, labor, and childbirth for the mother; the same quality of care for the baby; and also, well woman care.

However, there is opposition in many arenas to birthing centers as an alternative to hospital care, and there are policy questions to be answered. In one community, after a birth center's opening, the local insurance providers raised objections to the birth center as an alternative strategy to low-risk childbirth. The insurer's argument was that the birth center was a duplication of services already provided in the hospital, therefore, increasing costs without providing economical benefits. Another area of uncertainty was that if women needed to be transferred out of the birth center to the hospital for any reason, there would be an increase in costs because of using increased resources.

As a method for analyzing the cost-effectiveness issues related to these problems, the authors used decision analysis to answer the following questions:

- Is the birth center a cost effective choice for delivering a baby?
- Below what percentage of transfers to the hospital is optimal to make the birth center an economical choice with the current charges?

- What costs would need to be accrued by admitting a woman to the birth center and then needing to transfer her to the hospital to make the birth center an economical choice?

### Decision Analysis

Clinicians and policymakers need a general approach to decision making when the outcome is uncertain, and there is a need to formulate a policy that has applicability into the future. Decision analysis is a quantitative approach that was first developed by Raiffa at the Harvard Business School (1968). Decision analysis has been used successfully in medicine to reduce uncertainty in clinical management (Cantor, Clover, & Thompson 1994; Elstein 1989; Fuaker & Kassiror, 1987). In nursing, the usefulness of decision analyses to assess complex patient problems has also been demonstrated (Lanza & Bantly, 1991; Panniers & Walker, 1994). As a tool to assess cost effectiveness of alternative strategies of care, decision analysis has been proven to be an objective approach for the economic evaluation of alternative health care programs (Beattesson, Bergqvist, Jendteg, Lindgren & Persson, 1989; Drummond et al., 1987; Eisenman, Jones, McClatchey, & Borlase, 1989).

When using decision analysis, the analyst must create a decision tree which includes the following steps: (a) formulating the decision problem or questions (identified previously), (b) identifying the decision alternatives, (c) identifying the possible clinical outcomes of each of the decision alternatives and representing the events leading to these outcomes with a series of chance nodes and decision nodes, (d) measuring the outcomes, and (e) assigning probabili-

ties and calculating the expected value of each decision alternative.

A decision tree format (using SMLTREE computer software) was used to model this cost-effectiveness analysis of a birth center versus hospital care. SMLTREE has the advantage of being developed specifically for clinical decision analysis. By using computerized decision analysis, a complex decision tree more reflective of reality was constructed. In analyzing the decision tree, the computer easily and accurately calculates the average cost effectiveness of the competing strategies. The purpose of this analysis was to answer questions regarding the cost and quality outcomes of labor and delivery care in birth centers compared to hospitals, when care is provided by a CNM in both settings.

### The Decision Tree

Identifying the decision alternatives may be done by developing a decision tree. A decision tree is a chronological schematic method for representing all of the logical events to be considered in the analysis. For example, Figure 1 depicts the beginning structure of the decision tree. The square node denotes the decision to admit a woman to a freestanding birth center or a hospital for a low-risk delivery. The decision maker then determines the "chance events" that might occur after the decision is made. A chance event is any phenomenon that has a probability of occurring. For example, if a woman is admitted to a birth center, she may stay in the birth center for the entire labor, delivery, and postpartum period or she may need to be transferred. Figure 2 diagrams the branches of the decision tree that represent the important chance events to be considered for the woman who is not

Table 1.  
The Major Costs Associated with Low-Risk Delivery  
At a Birth Center and a Hospital

	Birth Center	Hospital
Hotel costs (vaginal delivery)	\$1,962	\$2,791
Hotel costs (cesarean delivery)	NA	\$4,916
CNM fee prenatal care	\$700	\$700
CNM fee vaginal delivery and postpartum care	\$224	\$224
MD fee cesarean delivery	NA	\$1,365
Ambulance	\$100	NA
Ambulance (advanced life support)	\$250	NA

transferred from the birth center.

Subtrees are an identical order of chance events that may occur in more than one place of the decision tree. For example, Figure 3 illustrates the subtree that is attached to a transfer from a birth center either by ambulance or car. This same subtree is found when a woman is directly admitted into the hospital. However, the quantification of the events will be different depending on the location of the subtree.

The associated costs and measurement of quality will be different when the woman is admitted directly into the hospital or transferred from the birth center.

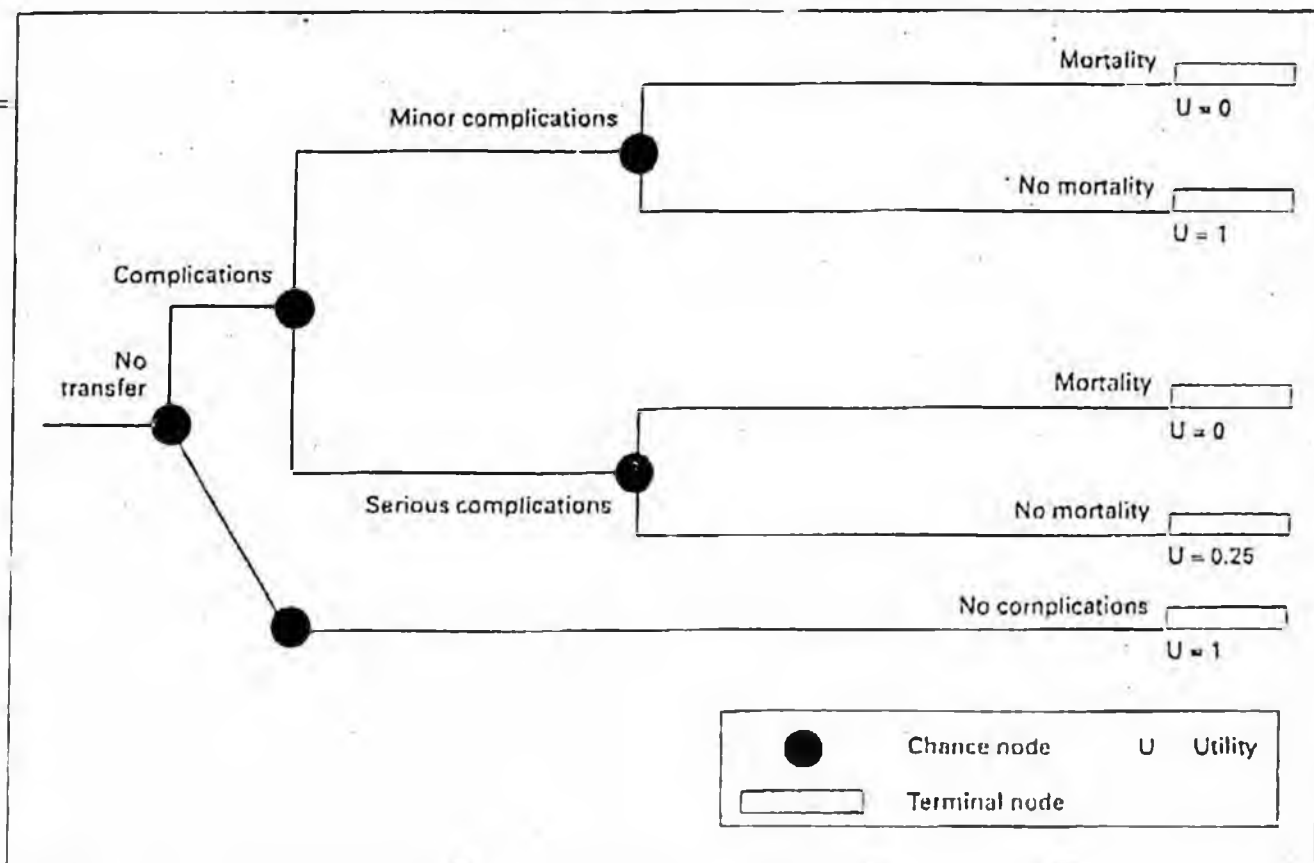
#### Measuring Cost Outcomes

Costs of different alternatives for delivery of health care fall into two categories: *direct costs* are the costs directly related to the care (such as cost of interventions and fee of providers), and *indirect costs* (such as fixed equipment costs and cost of education of clinician). Field research, in the form of interviews, was conducted to collect data on the costs of the alternatives. Interviews with financial managers of the obstetric department and the birth center provided data on patient charges. Interviews with local ambulance companies were also conducted to obtain an average billing charge for services. Charges billed, at the health corporation, reflect a 4-year projection of average direct costs per patient with fixed costs amortized. Table 1 lists the direct cost data pertinent to this analysis. Published averages of charges for maternity care services confirm the accuracy of those numbers (Conzales, 1993; Health Insurance Association of American, 1991). The Certificate of Need (1991) determined the fixed costs of the

Table 2.  
The Birth Center Research Compared to the Low-Risk  
Hospital Research

	Birth Center Study	Hospital Comparison
Number of subjects	11,814	2,256
% of births managed by CNMs	78.7%	78
Number of births at birth center	10,343 (87.5%)	NA
Total number of transfers	1,869 (15.8%)	NA
Serious labor and delivery complications	1,076 (10%) 353 (3.4% were transferred)	272 (12%)
Cesarean sections	455 (4.4%)	214 (9.5%)
Minor complications treated	5,167 (49%)	495 (21%)

Figure 2.  
The Chance Events that Occur if a Woman Delivers at a Birth Center



birth center to be relatively minimal with the cost of the moveable equipment needed to open the birth center totalling only \$18,125 and the annual building lease being \$42,000.

In this analysis, costs are defined as the economic impact of charges to the insurer and/or patient. It is important to note that charges do not necessarily reflect costs in many situations (Finkler, 1982). However, since the birth center and hospital in this study are owned by the same health care corporation (as previously mentioned), an assumption was made that the hospital policy and procedures, as well as intervention and billing practices for all cases

would be similar.

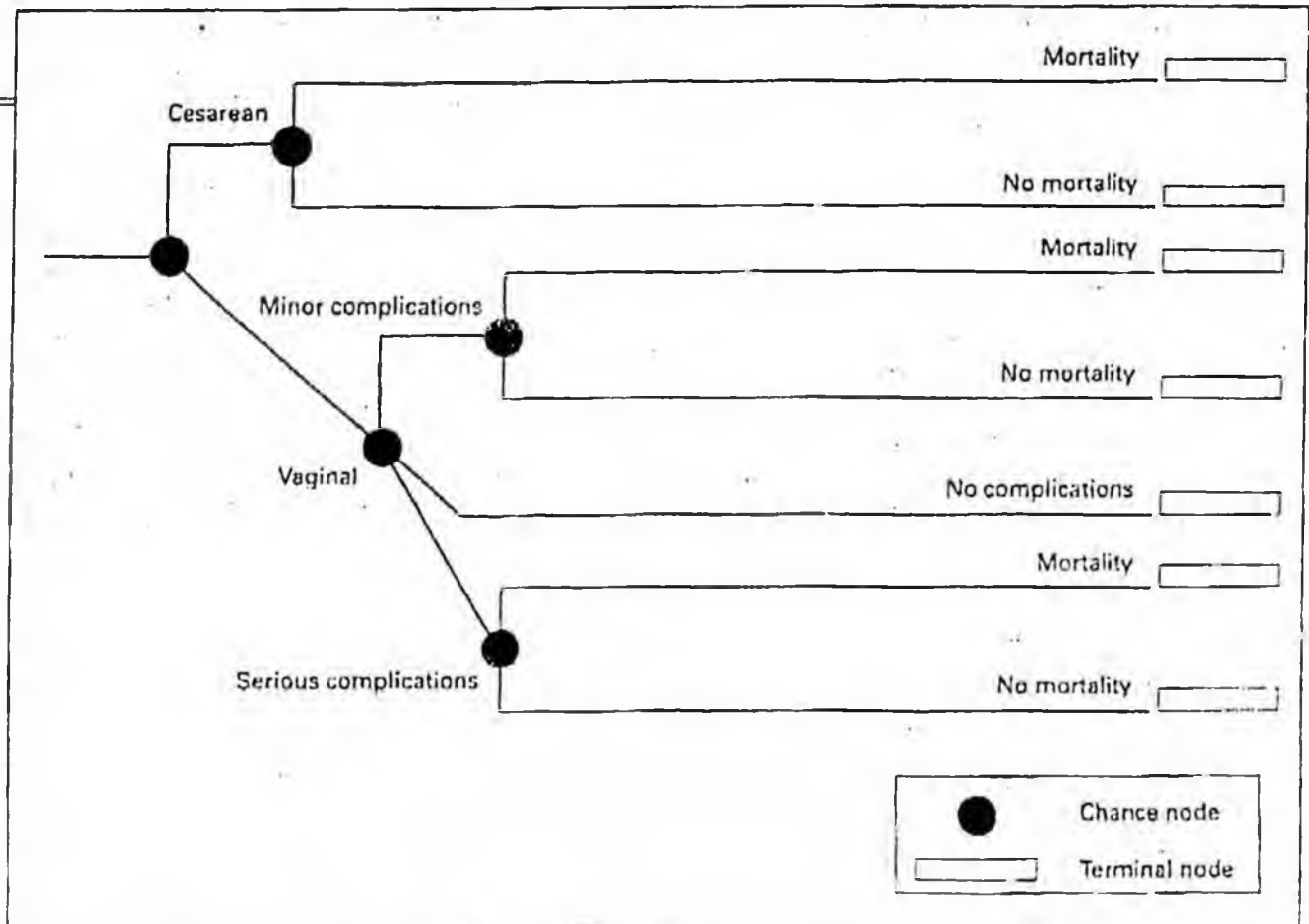
One advantage of using decision analysis is the ability to perform "sensitivity analysis" on a specific variable. A sensitivity analysis is a method for testing the validity of the conclusion over a range of probabilities or costs. With the use of diagnosis-related groupings (DRGs), only one charge can be generated for the diagnosis of normal labor and delivery. Therefore, although cases may start in the birth center and are then transferred to the hospital, the charge billed is the same for a case that began at the hospital. The costs of possible transfers have been added into the 4-year projections of costs and are reflected in

"hotel costs" or facility charges of the birth center. A sensitivity analysis on the hotel costs of the birth center will examine how critical this charge is to the overall conclusion of the analysis.

#### Measuring Quality Outcomes

To identify the logical outcomes to consider in this analysis a literature review was conducted. Much of the research on modern freestanding birth centers had been primarily descriptive (Biro & Lumley, 1991; Eakins, 1989; Paxson & Franklin, 1974; Reinke, 1982). The most comprehensive investigation, the National Birth Center Study, compiled statistics on essentially the entire popula-

**Figure 3.**  
A Subtree of Events that Occur Once a Low-Risk Woman is Admitted into a Hospital



tion of birth center births from 1985 to 1987 (Rooks et al., 1989; Rooks, Weatherby & Ernst, 1992a, 1992b, 1992c). Using the same data collection instrument, a retrospective comparison study collected data on low-risk hospital births (Fullerton & Severino, 1992). These investigations provided data on the probabilities of chance events occurring and the possible outcomes of each strategy were obtained. Important statistics, similarities, as well as differences of the outcomes of care between birth centers and hospitals are listed in Table 2.

Following the standard found in the literature for reporting complications, in this cost-effective analysis, maternal and infant clinical (quality) outcomes have been grouped according to seriousness of complications. Serious delivery complications are defined as maternal and infant outcomes that would be best managed in the hospital (Fullerton & Severino, 1992). Although the research revealed that hospitals have a slightly higher serious complication rate than birth centers ( $p=.10$  and  $p=.12$  respectively), to meet the assumption that the birth center is an

alternative to the hospital for the same low-risk population, the same probability ( $p=.10$ ) was used for both strategies. Because of the severity of serious delivery complications, an assumption was made in this analysis that all serious complications occurring in a birth center would need to be transferred to the hospital by an advanced life support ambulance.

Cost effectiveness may be expressed as the cost incurred per unit of outcome achieved. In health care, output may be defined as utility, additional years of life, or additional cases of newly

Table 3.  
Measuring Quality Outcomes in Units of Utility

	Birth Center	Car Transfer	Ambulance Transfer	Hospital
Vaginal delivery no complications	1.0	0.5	0.5	0.75
Vaginal delivery minor complications	1.0	0.5	0.5	0.75
Vaginal delivery serious complications	0.25	0.5	0.5	1.0
Cesarean section	NA	0.5	0.5	1.0
Maternal or infant mortality	0.0	0.0	0.0	0.0

detected disease (Sox et al., 1988). When using decision analysis for clinical management, utility may be a measure of the patient's preference or satisfaction with outcome. When using decision analysis as a tool for policy analysis, the utility must reflect the appropriateness of care for the aggregate population. The utilities in this analysis consider the appropriateness of the place of birth with regard to the clinical outcome. For example, as can be seen in Table 3, the highest utility is assigned to the birth center when the outcome is without complications or minor complications.

If the situation arises where a woman needs to be transferred from the birth center, the utility is less than using the hospital as the original birth site option. The exception is in the case of serious complications where it would be most appropriate for the woman to have been originally admitted to the hospital, or at least transferred to the hospital from the birth center prior to delivery. Consequently, the outcomes with serious complications have the highest utility when the woman was directly

admitted to the hospital and the lowest utility if the woman was not transferred from the birth center.

All available literature sources agree that maternal mortality is very low for low-risk births (Lilford, Van Coeverden De Groot, Moore, & Bingham, 1990; Miller, 1988; Petitti, 1985; Sachs et al., 1988). Maternal mortality is so rare that no maternal deaths were reported in either the hospital or birth center samples. Therefore, the probability of maternal mortality was estimated from the relative risk of mortality associated with cesarean sections ( $p=.0006$ ) and vaginal deliveries ( $p=.0001$ ) in hospitals controlling for women with pre-existing medical disorders (Lilford et al., 1990).

Available data also suggest a very favorable infant mortality rate of 1.3/1,000 births for infants in the birth center population. Other reports have calculated infant mortality of uncomplicated pregnancies in hospitals to be between 1.9 to 3.4 (Eden, Seifert, Winogar, & Spellacy, 1987; Fullerton & Severino, 1992; Koppel, Huuser, & Plucek, 1986; Leveno, Cunningham, & Nelson, 1986). Since one of

the underlying assumptions was that both alternatives in this analysis would serve the same population and therefore involve similar risks of death, the birth center infant mortality rate was used to calculate the probability of mortality for serious delivery complications in both approaches ( $p=.0013$ ). The argument that birth centers will increase the risk of infant mortality is not substantiated by the evidence and therefore was not included in this analysis.

#### The Cost-Effectiveness of the Birth Center

The results of this analysis suggest that a birth center is a cost-effective strategy for labor and delivery of low-risk women. The average cost of a delivery at the birth center is less, \$3,385 compared to the average cost of labor and delivery at the hospital which is \$4,673. The effectiveness or appropriateness of setting for the average low-risk birth was greater in the birth center than at the hospital (0.92492 and 0.79507 respectively). On average the hospital was 38% more expensive and a less appropriate model of care for

Figure 4.  
Impact of Transfers on Cost

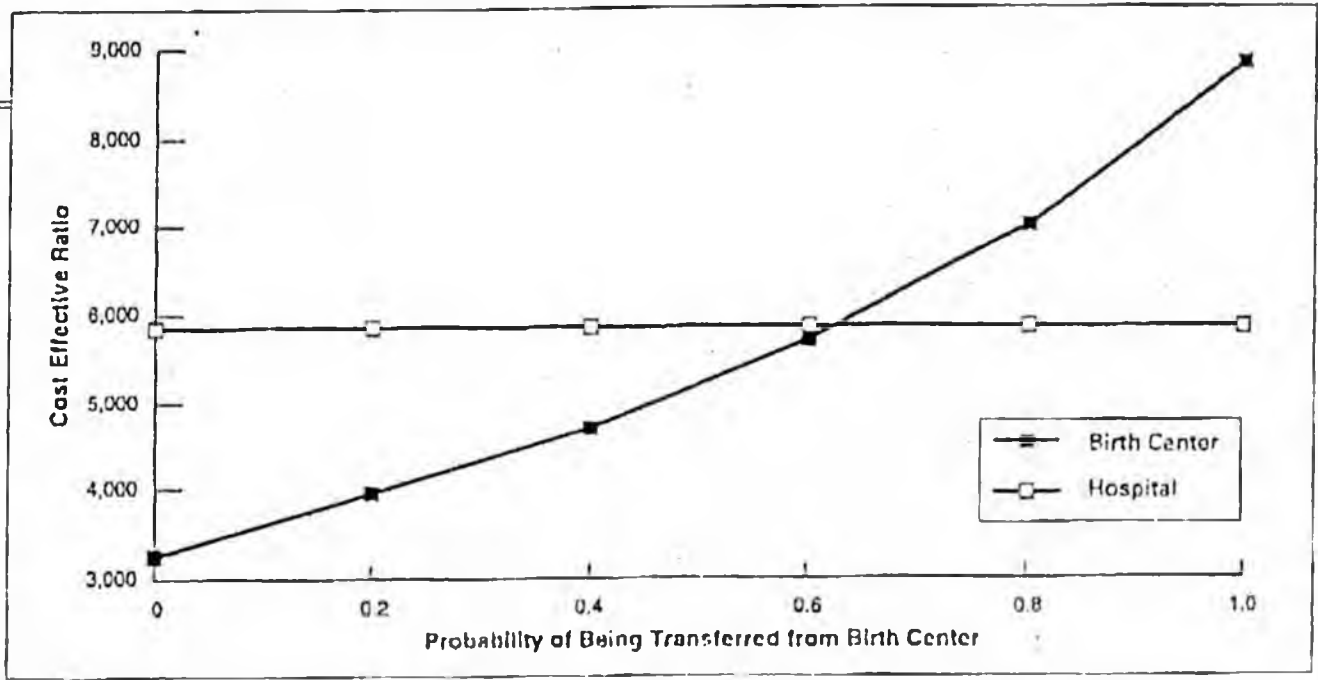
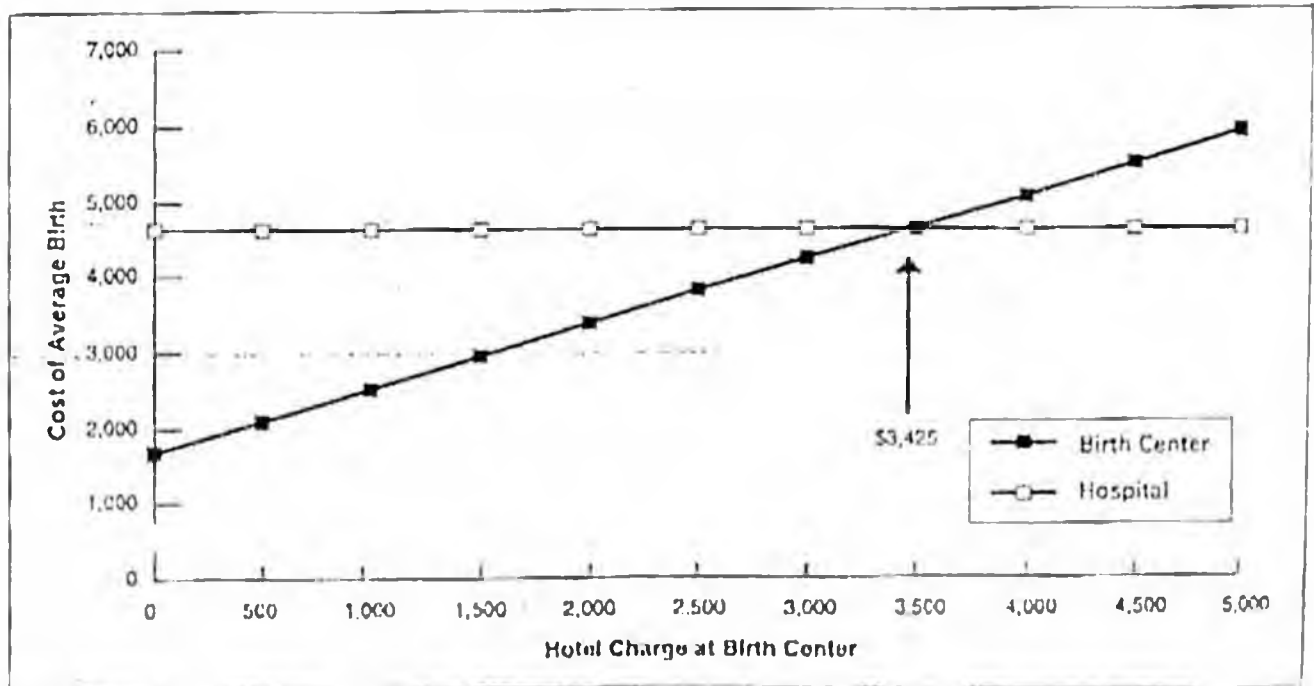


Figure 5.  
Impact of Hotel Charge on Cost



a low-risk birth.

Critics of birth centers usually point to the transfer rate as a negative aspect of the birth center. To analyze how the incidence of transfer affects the cost effectiveness of the birth center, a sensitivity analysis was performed varying the probability of transfers from 0 to 100%. As expected, the probability of being transferred out of the birth center to the hospital affects the appropriateness of choosing a birth center or a hospital for intrapartum care. However, as illustrated in Figure 4, it is not until the transfer rate reaches greater than 62% does the birth center stop dominating this decision analysis as the most cost-effective setting for a low-risk woman to give birth.

Investigators in the United States have found that parous women (prior delivery of an infant) have approximately a 7.3% chance of being transferred from a birth center to a hospital. The risk of needing to be transferred increases in nulliparous women (never having delivered before) to 28.9% (Rooks et al., 1989). Therefore, although careful assessment with attention to possible transfer is appropriate for all women considering delivering in a birth center, the birth center should be considered a cost-effective model of care for most low-risk women.

Because of the billing practices that have resulted due to DRGs, this analysis must test the assumption that charges reflect costs. If the 4-year projections do not adequately cover transfer costs, the results of this analysis would be void. By varying the hotel charge of the birth center we can see how critical the accuracy of this charge is to this analysis. As can be seen in Figure 5, when the hotel cost of

the birth center is unrealistically high (more costly than the hospital) at \$3,425, a threshold is reached and the hospital on average is less costly. Therefore it can be concluded that even if the birth center charged more, it would still be cost effective compared to a hospital.

### Summary

This decision analysis answered the questions posed regarding the cost effectiveness of a birth center, the transfer rate necessary to make the birth center a viable option, and the costs that would need to be accrued to make the birth center an uneconomical choice. In this analysis a birth center is a cost-effective strategy for low-risk labor and delivery care. The findings of this analysis indicate that insurers and health policy decision makers should view a birth center as an economical model of health care delivery. Further research regarding the outcomes of birth centers is needed. Research regarding the influences affecting a low-risk pregnant woman's personal preference for hospital or birth center births would also be beneficial.

With current spending patterns, it has been estimated that by the year 2000, the United States will spend 18% of our Gross National Product on health care. Therefore, we can expect continued interest and emphasis in the economic evaluation of health care. Nursing must demonstrate the capability to provide cost-effective care. As a quantitative tool for evaluating alternative strategies, decision analysis is useful in determining the cost effectiveness of nursing models of care. **S**

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with submitting an amended plan in order to receive an answer from CMS (Centers for Medicare & Medicaid) on this issue. If they deny the request, we will have two possible methodologies in order to accomplish the desired result of covering the facility fees for Birthing Centers.

The Legislature can authorize HSS to fund it entirely through GF. We might also raise the rates paid to midwives who use Birthing Centers to reflect the cost of that use.

The following information has been gathered and presented in this form for your information and use on that issue:

Senator Murkowski has received correspondence from constituents who are interested in the passage of SB 22. She has received the following information from the Congressional Liaison Office of Department of Health and Human Services Centers for Medicare and Medicaid Services (CMS), which she is sending to the constituents:

*Medicaid does not provide reimbursement of stand-alone birthing centers. They are not a 1905 recognized provider. Medicaid does reimburse nurse-midwives. However, the state can authorize a higher reimbursement to midwives who can then split their fee with their facility. Payment must be recognized to be on behalf of the recognized provider -- the midwife.*

*Nurse mid-wife services are recognized under section 1905(a)(17) of the SSA.*

*In general, states determine provider reimbursement rates but they must meet the payment requirements of section 1902(a)(30)(A) which requires that payments are consistent with efficiency, economy, and quality of care.*

*While CMS wouldn't match payments above a provider's actual costs, we would recognize the costs to the nurse midwife of providing services in a birthing center, which might include the administrative, and other reasonable costs associated with practicing in these centers, thus the higher reimbursement rate.*

If the Centers for Medicare and Medicaid Services feel this would be appropriate, I would like to see the department look into this possibility if both CMS and the Legislature do not act in a positive manner.

February 22, 2005

TO: Members of the Senate Finance Committee  
RE: SB 22

Dear Senator:

After detailed research, the following information has been collected for your review:

- Average cost for an MD or OB normal vaginal delivery, without complications (no labs)
- Average cost for an MD or OB c-section, or complicated delivery
- Average hospital costs for both normal and complicated delivery
- Average cost for an uncomplicated birth center birth
- Average cost for a birth center transport and subsequent hospital expenses
- Birth center statistics for the years 2002– 2004
- Hospital statistics for the year 2003 (from Vital Statistics)

MD or OB Average Cost for Low Risk NVDW/O PN Labs	MD or OB Average Cost for care w/ C-Section, w/o labs	Grand Total MD or OB for Low Risk NVD & Hospital CostsW/ a 1 Day Stay	Grand Total MD or OB for C-Section & Hospital Costs w/ a 3 day stay
\$5000.00	\$6,000.00	\$11,575.00	\$18,125.00

The costs reflected above are conservative. Cost comparisons for some doctors and hospitals in other cities are quoted on the following pages. Dr. or OB labs were not included here, but some are reflected on the following pages. Postpartum or newborn exams are not included. Labs were not included in the hospital cost comparisons, so those costs would need to be added to the above prices, as would the use of sterile and non-sterile supplies, IV costs, etc., making the grand total higher by several hundred or thousands of dollars in actuality.

Hospital statistics for 2003 were obtained through Vital Statistics and are reflected in the following pages. Many of the hospital prices are either quotes

from the hospital or some patients have faxed their itemized hospital statements for our review, so some charges were taken from the offered statements.

6 Birth Centers In Alaska	Birth Center Average Cost for Low Risk NVD and includes PP and NB care w/o labs& including facility fee	Birth Center Transport (minus facility fee) in labor resulting in NVD, 1 day stay, epidural, newborn care and BC charges for PN care	Birth Center Transport (minus facility fee) resulting in C-S, 3 day stay, epidural, newborn care and charges for PN care
Anchorage	\$6000.00	\$12,125.00	\$16,225.00

The above averages include prenatal care, postpartum and newborn care and the cost of the transfer (hospital costs). The averages above do not include labs, since the Dr. or OB costs did not include labs.

**Legend:**

C-S = cesarean section delivery	NVD = normal vaginal
FHT = fetal heart tones section	PCS = primary c-
FP = failure to progress	RCS = repeat c-section
PN = prenatal	U/S = ultrasound
PP = postpartum	VB = vaginal birth
PROM = premature rupture of membranes c-section	VBAC = vaginal birth after
PPROM = prolonged w/o Labor or FP	
NB = newborn	

In some instances (few) an ambulance was called to transport the mother or newborn. The cost of ambulance services should be added to the total cost of transport. The fee ranges from \$350.00 to \$500.00 for ambulance services, depending on how far they are from the hospital.

During the Senate HESS Hearing, Dr. Jacobs stated midwives should have a 0% transport rate if they truly know how to risk out their patients. The following information is a collection of statistics from seven birth centers in Alaska. As will be demonstrated, the reasons for transports were as a result of following Alaska State regulations for Certified Direct-entry Midwives, and not through mismanagement. There is no way to rule out for a certainty if a woman will fail to progress in labor, if her baby will turn breech or if her baby will need to be transported. On the following pages our statistics show the numbers, the reasons, and the outcomes for each transport.

# Birth Centers in this study	Total Births 2002	Total Transports 2002	Total PP or NB Transports 2002	# Birth Centers in this study	Total Births 2003	Total Transports 2003	Total PP or NB Transports 2003
6	302	27	3	6	289	33	3

# Birth Centers in this study	Total Births 2004	Total Transports 2004	Total PP or NB Transports 2004	# Birth Centers in this study	Total Births 2002-2004	Total Transports 2002-2004	Total PP or NB Transports 2002-2004
7	485	33	4	7	1076	93	10

The most common reasons the women in this study were transported are as follows:

**Failure to progress in labor.** These women either progressed to a point and stopped, or remained at the same dilation for longer than is acceptable, or the baby was in an unfavorable position, or after pitocin induction fetal heart tones showed the baby couldn't stand the forces of labor, so a c-section was performed. Most required pitocin augmentation to deliver, and most delivered vaginally. Some had c-sections.

**Failure to progress with prolonged rupture of membranes.** Some of these women had ruptured membranes with no labor. All attempts at natural induction did not work, or they reached our regulation time-limit, so had to go to the hospital. These women are usually transported via car, not ambulance.

**Immediate Postpartum: Retained Placenta.**

All of the women transported for retained placenta required manual removal, usually with pain relief. Our regulations stipulate that if the placenta is not born within 1 hour of delivery, transport is required. Our statistics show 6 women were transported for this condition.

**Newborn:**

Most newborns were transported for transient tachypnea (rapid breathing), which resolved on its own. Babies were transported per regulations.

One baby had recurrent apnea (stops breathing), that eventually required a monitor. All others had good outcomes.

Number of women requiring a c-section out of 1076 live births from 2002-2004:

2002	2003	2004	Total
14	12	11	37

Thirty seven c-sections out of 1076 births gives the birth centers an average c-section rate of 3.44% for the last three years.

Episiotomy Rate	Perineal Repair Rate	Fee Paid for Perineal Repair Rate	Transport Rate
0%	12%	\$000	8.6%

Episiotomy is rare among midwives. The 0% rate indicated is because the midwives have not performed one in years, if ever. Perineal injuries, from small nicks to second degree lacerations happen about 12% of the time, and mostly with first-time mothers. Midwives are permitted to perform episiotomy in an emergency, but rarely find the need to do so. Midwives are allowed by law to use a local anesthetic (Lidocaine) to numb the area so the woman can be fairly comfortable while the midwife sutures. Women report they feel better and heal faster without an episiotomy; so the procedure is reserved for emergencies.

Episiotomy is common, almost routine, in the hospital. Doctors are paid for the service of episiotomy and perineal repair. Hospitals are paid for the supplies necessary to perform the service. Midwives are not paid.

Across the nation birth center studies are proving that low-risk women choosing birth center care are at a definite advantage. C-section rates are lower than hospitals by and large (and should be). Fewer pre-term babies are seen in birth center statistics because of the extra time and nutritional counseling midwives offer. This saves the State a lot of money as a small but growing number of Alaskan families are opting for natural, un-medicated birth center birth.

Please note the statistics herein regarding the 7 mentioned birth centers does not include other midwives. There are other licensed midwives in the state of Alaska doing home births.

There have been a few midwives that have lost their licenses or certification because they did not follow protocol, did not make wise choices and had a bad outcome. We cannot deny the few bad outcomes by these midwives or non-licensed midwives. The same is true for doctors.

Midwives do not offer pain medication in birth centers. Water is used to help control pain. We call it our "liquid epidural." As birth center studies bear out, more and more women are opting for drug-free births.

The birth centers in this study had an 8.6% transport rate, which is below the average, for a low risk population. Some of the birth centers had lower individual transport rates.

In the following pages you will find statistics and information on epidurals, pitocin induction as well as an article from the Anchorage Daily News claiming "a study clears the use of epidurals" in earlier labor. These articles have been included to show you the trends, not only in Alaska, but across the nation. It is hoped you will see that the birth centers in this study have better outcomes, lower risk factors, and cost-effective services that should be available to anyone seeking out-of-hospital birthing care.

Sincerely,

Sharon K. Evans, CPM, CDM