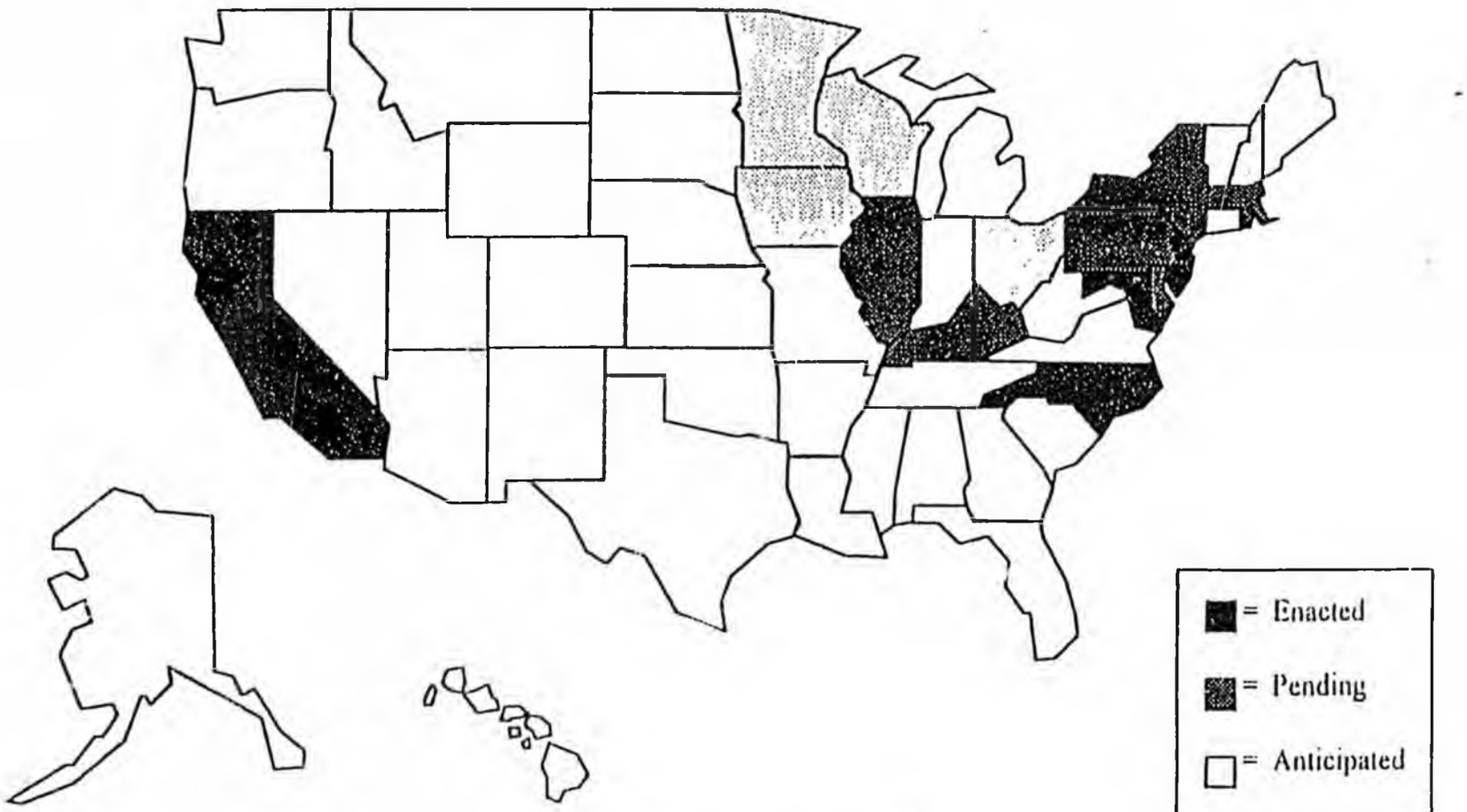
ALASKA LEGISLATURE COMMITTEE FILES 1995-1996 8672
8577 HOUSE HEALTH EDUCATION & SOCIAL SERVICES

1995-1996 State Legislation
Insurance Coverage for Postpartum Care



American College of Obstetrics and Gynecologists

May 5, 1995

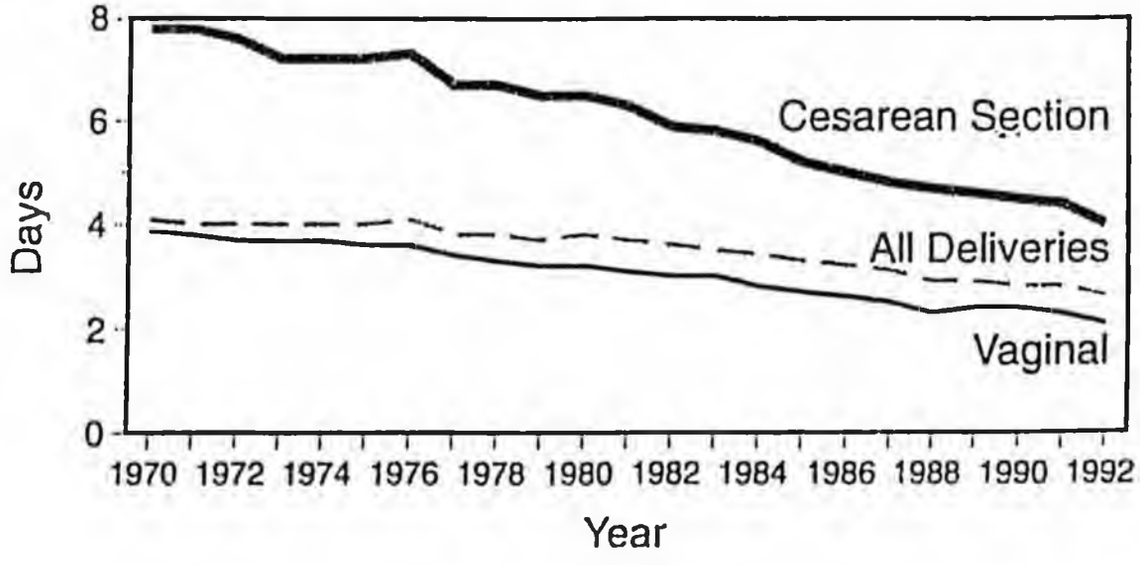
Trends in Length of Stay for Hospital Deliveries — United States, 1970–1992

Obstetric delivery is the most frequent cause of hospital admission in the United States, reflecting the approximately 4 million births in this country each year (*1*). Because of steadily increasing hospital costs, overall lengths of hospital stay have declined. To assess national trends in length of stay for hospital deliveries, data were analyzed from CDC's National Hospital Discharge Survey (NHDS) from 1970 through 1992, by method of delivery. This report summarizes the results of the analysis.

Since 1965, the NHDS has collected data from U.S. nonfederal, short-stay hospitals. Each year, approximately 200,000 inpatient records are selected from approximately 400 hospitals; data are weighted to represent all hospitalizations nationally (*2,3*). Selected patient information (e.g., medical diagnoses and surgical procedures) is abstracted from each record. For this analysis, the NHDS provided information about mother's age and race/ethnicity; method of payment; and the hospital's ownership, size, and location. Estimates for average length of stay were derived from the 20,000–33,000 deliveries each year among all records sampled. Hospital stays of <24 hours were recoded as 0 days; these hospitalizations accounted for <1% of all deliveries and were relatively constant by year (i.e., 0.3% in 1970 to 0.7% in 1992). The proportion of all deliveries that occurred outside of hospitals also was stable from 1975 (0.9%) to 1990 (1.1%) (*4*).

In 1970, the average length of stay for all hospital deliveries was 4.1 days (median: 4 days). By 1992, the average had decreased by 37% to 2.6 days (median: 2.0 days). The average length of stay for women who gave birth vaginally decreased by 46% (from 3.9 to 2.1 days) and for those who gave birth by cesarean section by 49% (from 7.8 to 4.0 days) (Figure 1). The decrease in the average length of stay for all deliveries was smaller than that for either method because the percentage of deliveries by cesarean section increased from 5.5% to 23.5% during this period (*5*).

FIGURE 1. Average length of stay for hospital deliveries, by delivery method — United States, 1970–1992



Hospital Deliveries — Continued

The average length of stay also was analyzed by mother's age (<20, 20–29, 30–39, and >39 years), race (white or black)*, hospital location (Northeast, Midwest, South, or West regions), hospital ownership (proprietary, government, or nonprofit), and hospital size (<100, 100–299, 300–499, and >499 beds). From 1970 through 1992, the average length of stay decreased similarly for all these groups; decreases ranged from 39% to 52% for vaginal deliveries and from 38% to 53% for cesarean deliveries. NHDS began collecting information about method of payment (i.e., Blue Cross/Blue Shield†, other private insurance, Medicaid, and self-paying) in 1977. From 1977 through 1992, the average length of stay decreased for these payment groups; decreases ranged from 35% to 38% for vaginal deliveries and from 32% to 47% for cesarean deliveries.

Reported by: Div of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion; Prevention Effectiveness Activity, Epidemiology Program Office, CDC.

Editorial Note: The length of stay associated with hospital deliveries steadily decreased during 1970–1992. Early hospital discharge results in reduced health-care costs and enables mothers to return home sooner with their newborns. However, careful postpartum follow-up is necessary to ensure prompt diagnosis and treatment of any maternal or neonatal complications. Early discharge should not preclude efforts traditionally conducted during postpartum hospitalization to educate women about breastfeeding, family planning, care of their newborn, and other topics important for new mothers.

The optimal length of stay for uncomplicated deliveries reflects several factors, including the presence of others in the home who can support the mother at discharge, the mother's awareness of complications, and access to health-care services. Guidelines published by the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists suggest that, when there have been no complications, the duration of postpartum hospital stays range from an average of 48 hours for vaginal delivery to an average of 96 hours for cesarean birth (excluding the day of delivery) (*6*). In addition, specific criteria should be met for a woman to be discharged early, especially within 24 hours of delivery.

One potential limitation of the analysis in this report is that data from the NHDS on length of stay does not distinguish the postpartum period from the rest of the hospitalization. Therefore, this analysis could not determine whether the decrease in the average length of stay resulted from a shorter antepartum stay or postpartum stay. However, since 1970, most of the efforts to decrease length of stay for hospital deliveries has been directed toward the postpartum period.

Since 1970, the rate of health-care costs has increased more rapidly than that of general inflation; efforts to decrease hospital health-care costs by reducing length of stay will probably intensify. Most studies have not detected an increased rate of morbidity in association with early postpartum discharge (*7–9*). However, these studies—which were conducted among carefully selected women at low risk for postpartum complications—documented rates of complications of up to 14% among women and 11% among their infants (*7*). In addition, home visits by nurse practitioners after discharge (a practice not routinely used by health-care providers) ensured

*Numbers from other racial/ethnic groups were too small for reliable analysis.

†Use of trade names and commercial sources is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

alaska academy of physician assistants

To: Senator Judith Salo
Alaska State Legislature
Juneau, Alaska 99801

From: Jeanne Clark, PA-C
Alaska Academy of Physician Assistants
479 Slater Drive
Fairbanks, Alaska 99701

Date: March 5, 1996

Re: Senate Bill 193

Dear Senator Salo,

The current trend of the insurance industry to restrict length of hospitalization after childbirth is an effort to decrease costs. Every delivery can be different and complications can occur. The practice of keeping the mother and infant in the hospital after delivery is to monitor for such complications and to educate the mother on appropriate care and health promotion of the infant. By monitoring and educating, the insurance industry may provide more benefits at the time of delivery, but in the long run will decrease costs due to the early detection and preventative promotion done prior to discharge of the mother and infant.

Physician Assistants, as members of the health care team, actively support methods to promote health and prevention but are very concerned about cost effective health care. The Alaska Academy of Physician Assistants support Senate Bill 193 to prevent the mandatory early discharge and continue to support the physician to determine when the mother and infant is ready for discharge. It is more cost effective to spend resources in an area that can promote positive outcomes than to save money now and pay later when problems could have been prevented.

Jeanne Clark, PA-C

Letters of Support

OB-GYN ASSOCIATES
GEORGE STRANSKY, MD, FACOG
Diplomate, American Board of Obstetrics and Gynecology
LYNN HARTZ, RN, MSN, ANP
Advanced Nurse Practitioner

4231 Lake Otis Parkway, Anchorage, Alaska 99508-5293
(907) 562-2966, Fax (907) 561-1257

January 17, 1996

To: Senator Judith E. Salo, Alaska State Legislature
From: George Stransky, MD, Chairman, Department of Obstetrics and Gynecology, Providence
Re: Senate Bill No. 193

Dear Senator Salo:
From my medical standpoint, your Senate Bill No. 193 is sound and the time intervals are reasonable. It seems to protect the family while not placing undo hardship on insurance coverage.

Such a bill would have seemed unnecessary only a few years ago. However in recent years, insurers continue to push the envelope at intimidation and innuendo in their dealings with their policy holders. I repeatedly feel that insurance firms are not clear about their intent and coverage when a policy is sold, that insurance firms make decisions with flow charts and statistics without the same level of expertise in an individual case as medical personnel dealing with a given situation, and that review organizations seem like poorly disguised cost control points.

If your bill is not voted into law, I would encourage pressure to remain on insurance companies for full disclosure of benefits or full responsibility of risks involved in childbirth.

Thank you for caring.

George Stransky

George Stransky, MD, FACOG
Chair, Department of Obstetrics and Gynecology, Providence Alaska Medical Center
Associate Professor, University of Washington School of Medicine
Adjunct Facility, University of Alaska Anchorage

ALASKA WOMEN'S LOBBY

416 Harris Street, Suite 208, Juneau, Alaska 99801
(907) 463-6744 phone / (907) 586-2680 fax

11 February 1996

The **Alaska Women's Lobby supports the passage of SB193** which would require insurance coverage for follow-up hospitalized medical care up to 48 hours after vaginal birth; and up to 96 hours after cesarean birth.

We agree with the sponsors' concern that there are legitimate reasons for some new mothers to require additional recovery time and information that can only be provided for in the hospital following birth.

Forced premature discharge can put an exhausted parent in jeopardy and the care of the new infant at risk. Training, such as how to breast feed is just one of many essential tasks that a new mother must be taught.

We urge the passage of this legislation.

Sincerely,

Leah L. Burton
for the Alaska Women's Lobby

ALASKA STATE

HOSPITAL & NURSING HOME

ASSOCIATION

February 14, 1996

Senator Tim Kelly, Chair
Labor & Commerce Committee
Alaska State Senate
Capitol Building
Juneau AK 99801

Re: Support, SB 193
Insurance Cost of Birth

Dear Senator Kelly & Members of the Labor & Commerce Committee:

ASHNHA, representing community hospitals & nursing homes across Alaska asks your support of SB 193.

We consider it unfortunate that consumers and health providers must turn to the Legislature to mandate health insurance coverage. Ideally, this should be negotiated and agreed upon between the buyers and sellers of health insurance. Unfortunately, the cost of health care, and everyone, including insurers, attempting to find ways to control or reduce costs has triggered this appeal to the Legislature.

A debate is currently underway nationally on the issue of appropriate length of hospital stay for a mother and her newborn following delivery. Statistics nationally show the average length of stay for all hospital deliveries in 1970 was 4.1 days. By 1992, the average had decreased to 2.6 days. In Alaska, hospital administrators feel this is needed legislation even though the trend has been to release obstetrical patients and their newborns within 24 hours.

The cost of an additional day of obstetrical care can run from $600 to a $1,000.00. This can be a major cost impact to a young family and should be covered, when medically necessary, by health insurance.

Sincerely,

Harlan R. Knudson
President/CEO

319 SEWARD STREET #11 • JUNEAU, AK 99801 • (907) 586-1790 • FAX (907) 463-3573

TONY KNOWLES, GOVERNOR
State of Alaska

GOVERNOR'S COUNCIL ON DISABILITIES AND SPECIAL EDUCATION

P.O. Box 240249 • Anchorage, Alaska 99524-0249 • Phone: 907-563-5355 • Fax: 907-563-5357

Senator Judy Salo
Room 504
State Capitol
Juneau, Alaska 99801-1182

March 19, 1996

Dear Senator Salo;

Thank you for your efforts in addressing the needs of mothers and newborn babies through Senate Bill 193. The Governor's Council on Disabilities and Special Education believes that Senate Bill 193 will improve the long term health of both mothers and newborns.

Alaskans' general health ranks 46 of 50 states, and health insurance companies have few policies to improve Alaska's ranking. Many insurance companies require moms and newborns to leave hospital care after just 24 hours.

Early hospital discharges can be detrimental to both the mom and baby, especially in rural Alaska. The first few days after birth are critical to adequately assess the mother's postpartum health and evaluate the infant's development. With the option of a slightly longer hospital stay, mothers can receive necessary care, training, and infant assessment services.

The Council supports Senate Bill 193 because it stops "drive-through deliveries" and provides Alaska with healthier families. If you have any questions or comments, please contact Noelle Hardt, the Council's Political Science Intern, at (907)563-5355.

Sincerely,

Kathleen Fitzgerald

Kathy Fitzgerald
Governor's Council on Disabilities
and Special Education, Chair

3/25/96

Dear Senator Salo,

I am writing on the behalf of Senate Bill No. 193, which will allow new moms and infants more hospital time and require insurance companies to provide this coverage. I am a Social Work student in my final year of college, and conducting my practicum at the Anchorage Neighborhood Health Center. As you can well imagine, working in the perinatal program brings up the very issues you have raised in Senate Bill No. 193. I have encouraged the OB providers at the clinic to advocate for this bill, and provided them with information on how to do so.

I am in favor of Senate Bill No. 193 and wish to support it in any way, shape, or form. Please send any information on how I might do so.

Sincerely,

Alison Florio

Alison Florio
6538 Nottinghill Dr.
Anchorage, AK
99504

The American College of Obstetricians and Gynecologists

May 23, 1995

STATEMENT ON DECREASING LENGTH OF HOSPITAL STAY
FOLLOWING DELIVERY

The American College of Obstetricians and Gynecologists (ACOG) is concerned about the decreasing length of time following delivery when mothers and newborns are discharged from the hospital. Although the trend to short hospital stays has been jokingly referred to as "drive through delivery," it is not a laughing matter.

As an organization dedicated to the primary health care of women and to insuring the optimal outcome of pregnancies, ACOG believes that changes in practice such as early discharge following obstetrical delivery should be based on sound scientific data that demonstrate good outcomes for mother and infant, as well as being cost effective. As yet, these data do not exist. Until they do, the burden of proof of safety of early discharge rests with those who are driving the change.

A recent analysis by the Centers for Disease Control and Prevention (CDC) found that between 1970 and 1992 the median length of stay for women who gave birth vaginally decreased by 46 percent (from 3.9 to 2.1 days), and for those who had a cesarean delivery by 49 percent (from 7.8 to 4 days).[1] Because the data included complicated deliveries, the median length of stay for uncomplicated vaginal deliveries or cesareans was probably considerably shorter.

Guidelines for Perinatal Care, a collaborative document between ACOG and the American Academy of Pediatrics (AAP), indicates that in otherwise uncomplicated deliveries the postpartum hospital stay ranges from 48 hours for vaginal delivery to 96 hours for cesarean delivery, *exclusive of the day of delivery*.[2] Yet it has become common for insurers to limit length of stay to up to only 24 hours following vaginal delivery and up to 72 hours following cesarean delivery. ACOG's concern is heightened by reports of insurers proposing 12 hour stays following uncomplicated vaginal delivery and 48 hour stays following uncomplicated cesarean delivery, and by indications that some insurers are considering 6 hour stays for routine deliveries.

Although the move toward earlier discharge began in response to consumer demand during the 1970s -- to decrease medical interventions surrounding childbirth and provide a more family-centered birth experience -- the recent trend to even shorter length of stay following delivery appears to be driven primarily by financial motivations. At a time when obstetrical delivery is the most frequent cause of hospitalization in the United States, the shortening of a woman's hospital stay holds obvious appeal to insurers.

200 12th Street, SW, Washington, DC 20024-2188 (202)638-5577

Length of hospital stay may affect the recovery of the mother, and the newborn's stabilization and screening tests. Significant maternal physiologic changes and newborn adaptation occur during the first few days of life. Not all serious maternal or newborn problems or complications are evident within the first 12 or 24 hours following birth. ACOG is concerned about anecdotal reports of serious problems in newborns, such as dehydration and undetected jaundice, following early discharge.

ACOG is also concerned that opportunities for educating new mothers in the care of their newborns are lost when early discharge is inappropriate. For example, the initiation of breast-feeding and lactation is a very important process that occurs over the first few days following birth. Home care services should provide education regarding maternal recovery and newborn care. However, the availability, structure and content of home visits and services vary widely across the country. Moreover, such instruction may not always be an effective substitute for "on-demand" education provided in the hospital.

In other instances, a mother may be discharged to go home first, without her baby, or an inappropriate early discharge may result in separate readmission of either the mother or newborn. Such separation, while temporary, can come at a critical phase in the development of the mother-infant relationship.

ACOG acknowledges that selective, early discharge is safe and desirable for some mothers and babies. However, a decision for early discharge should be *individualized* and should be a mutual decision between the patient, her family, and the obstetrical provider -- taking into account medical risk factors, support systems for the family, and the readiness of the mother to care for herself and her newborn.

The routine imposition of a short and arbitrary time limit on hospital stay that does not take maternal and infant need into account could be equivalent to a large, uncontrolled, uninformed experiment that may potentially affect the health of American women and their babies. There is relatively little scientific data on the ideal length of hospital stay for delivery. A critical review of existing literature indicates that studies have not yet conclusively demonstrated the safety of early discharge.[3]

For this reason, ACOG believes that the American health care system should call for a moratorium, or a "time-out," on further reduction in hospital stays following delivery, until we have the data that clearly demonstrate the safety of early discharge for women and their babies.

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[1] CDC. Trends in length of stay for hospital deliveries - United States, 1970-1992. MMWR May 5, 1995; 44: 335-337.

[2] AAP and ACOG. Guidelines for Perinatal Care, 3rd ed. 1992 (4): 105-111.

[3] Braveman P, Egerter S, Pearl M, Marchi K, Miller C. Early discharge of newborns and m[illegible] a critical review of the literature. Pediatrics 1995 (in press).

ORGANIZATIONS WHICH HAVE ENDORSED S. 969, THE NEWBORNS' AND MOTHERS' HEALTH PROTECTION ACT

American Medical Association
American College of Obstetricians and Gynecologists
American Academy of Pediatrics
Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN)
National Association of Neonatal Nurses
National Association for Home Care
Association of Maternal and Child Health Programs
The March of Dimes
American Association of University-Affiliated Programs
American Foundation for the Blind
American Speech Language Hearing Association
Brain Injury Association
Center on Disability and Health
Justice for All
National Association of the Deaf
National Association of People with AIDS
Research Institute for Independent Living
Spina Bifida Association of America
The Arc
National Easter Seal Society

ALASKA STATE

HOSPITAL & NURSING HOME

ASSOCIATION

March 28, 1996

Representative Con Bunde, Co-Chair
Representative Cynthia Toohey, Co-Chair
House HESS Committee
Capitol Building
Juneau AK 99801

Re: Support, SB 193
Insurance Cost of Birth

Dear Co-Chair and members of the House HESS Committee:

ASHNHA, representing community hospitals & nursing homes across Alaska asks your support of SB 193, requiring health insurance coverage for obstetrical care.

A debate is currently underway nationally on the issue of appropriate length of hospital stay for a mother and her newborn following delivery. Statistics show the average length of stay for all hospital deliveries nationwide in 1970 was 4.1 days. By 1992, the average had decreased to 2.6 days.

In Alaska, hospital administrators feel SB 193 is needed legislation even though the trend has been to release obstetrical patients and their newborns within 24 hours.

The cost of an additional day of obstetrical care can run from $600 to a $1,000.00. This can be a major cost impact to a young family and should be covered, when medically necessary, by health insurance.

Sincerely,

Harlan R. Knudson
President/CEO

319 SEWARD STREET #11 • JUNEAU, AK 99801 • (907) 586-1790 • FAX (907) 463-3573

ALASKA STATE MEDICAL ASSOCIATION

4107 Laurel Stree' • Anchorage, Alaska 99508-5334 • (907) 562-2662 • FAX (907) 561-2063

April 2, 1996

Senator Judith E. Salo
Alaska State Legislature
State Capitol
Juneau, AK 99801

Re: SB 193, postpartum hospital insurance coverage

Dear Senator Salo:

The Alaska State Medical Association supports SB 193 requiring health insurance policies to cover not less than 2 or 4 days of hospitalization following vaginal or C-section delivery, respectively.

In general, we do not favor laws "micromanaging" either medical care or insurance coverages; but we agree that many new mothers are not ready, medically or otherwise, to go home immediately after birthing. Therefore, your bill is entirely appropriate.

Sincerely,

Rodman Wilson

Rodman Wilson, MD
Acting Executive Director

9-LS1307\C.1
Ford
4/11/96

AMENDMENT

OFFERED IN THE HOUSE BY REPRESENTATIVE BUNDE

TO: CSSB 193(L&C)

Page 1, line 1:

Delete "**requiring**"

Insert "**relating to**"

Page 1, line 6:

Delete "provide"

Insert "offer"

Page 1, line 10:

Delete "provide"

Insert "offer"

Guideline: HRC
Title: 24_Hour_Discharge_Following_Uncomplicated_Vaginal_Delivery_-HRC-
Date: 12/15/95
Version:
Code:

The following clinical guideline is a summary of currently available clinical research and relevant recommendations. Clinical Guidelines set forth standards regarding safety and effectiveness or appropriateness and/or medical necessity upon which coverage or utilization management determinations will be based.

While this Clinical Guideline will direct coverage and benefit decisions, such determinations are always subject to the definitions, provisions, conditions, limitations and exclusions in a member's individual benefits policy or contract and the Certificate of Coverage. To the extent that the information contained in this Clinical Guideline is inconsistent with or otherwise differs from state or local laws which mandate coverage, the provisions of such laws will control the applicable coverage or utilization management determination.

Nothing in this Clinical Guideline should be construed as affecting a provider's sole responsibility for determining the appropriate course of treatment for his or her patient.

CLINICAL POLICY: (11/95, Vincent Jaeger, M.D., author)
Discharge of maternity patients and their full-term newborns within 24 hours following an uneventful antepartal and intrapartal course, an uncomplicated vaginal delivery, and a normal postpartal course, excluding patients having tubal ligation, is considered safe and effective, providing the mutual decision between mother and physician meets ALL the patient selection criteria established by the American College of Obstetrics and Gynecology (1) and by the American Academy of Pediatrics (2), and particularly if follow-up care after discharge is supplemented by home health nursing visits

Application of the following guidelines is appropriate to evaluate potential for discharge 24 hours after vaginal delivery in those individuals identified by the following patient selection criteria.

PATIENT SELECTION CRITERIA FOR 24-HOUR MATERNITY DISCHARGE: (1)
(ALL of the following must be met)

These guidelines represent implementation of the American College of Obstetrics and Gynecology guidelines and policies

1. A minimum of twelve hours hospitalization following delivery for stabilization

2. Findings indicating a patient is "stable" following an uncomplicated vaginal delivery, including:

   - Vital signs:
     - temperature less than 38° C (100.4° F)
     - pulse less than 100
     - blood pressure ≥ 90/60 and ≤ 140/90 and/or consistent with blood pressure during antepartal course

- Physical signs:
  - fundus firm and nontender with no excessive vaginal bleeding
  - the lochia color is as expected and without odor
  - no calf tenderness/negative Homan's sign
  - episiotomy incision or laceration is healing well

- Functional signs:
  - able to void adequately
  - IV discontinued and tolerating oral intake
  - ambulating independently without difficulties

3. Laboratory data :
   - Hematocrit > 30%
   - Hemoglobin > 10mg%
   - ABO blood group and Rh typing conducted on newborn (and mother, if not previously done)

4. Capacity to care for self and newborn

5. Education in health assessment and self-care, and in the care of the newborn, including understanding of problems which more commonly occur in the first three to five days following delivery (this education can be received through means of childbirth education classes, prenatal visits to a pediatrician, or hospital-directed educational efforts)

6. Identification of a physician-directed source of continuous medical care following hospital discharge and definitive plans for follow-up established

7. Rho(D) immunoglobulin administered as indicated, based on results of Rh typing of newborn or plan for administration developed

8. Rubella vaccine administered if mother considered non-immune by serologic criteria, or plan for administration of vaccine established

9. Family members or other support person(s) should be available to the mother for the first few days following discharge

A delay in the discharge of a mother following a normal vaginal delivery may be medically necessary if there is a need for continued observation or treatment of a medical problem or complication which is related to or is the direct result of the current pregnancy or delivery

A delay in the patient's discharge beyond 24 hours may be medically necessary if **ANY** of the following are present:

1. History and Physical Findings :

   - Intrapartum :
     - rupture of membranes ≥ 24 hours prior to delivery with suspicion and/or evidence of possible infection
     - blood pressure > 140/90 mm Hg or increase of 30 points systolic or 15 points diastolic over pre-pregnancy or first trimester blood pressure
     - temperature ≥ 38° C (100.4° F)

- Postpartum :
  - temperature ≥ 38° C (100.4° F)
  - infection present (endometritis, urinary tract infection)
  - blood pressure < 90/60 or > 140/90 mm Hg or increase of 30 points systolic or 15 points diastolic over pre-pregnancy or first trimester blood pressure
  - excessive vaginal bleeding (blood loss in excess of 1000 cc following a vaginal delivery)
  - inability to ambulate independently
  - unable to void spontaneously, e.g., patient catheterized
  - signs of deep venous thrombosis (calf tenderness/positive Homan's sign)

2. Laboratory :

- Postpartum :
  - hematocrit ≤ 30% (new onset) if the patient is symptomatic (e.g., orthostatic) or transfusion to treat the anemia is planned
  - hemoglobin ≤ 10mg% (new onset) if the patient is symptomatic (e.g., orthostatic) or transfusion to treat the anemia is planned

INAPPROPRIATE INDICATIONS FOR EXTENDING LENGTH OF STAY:

1. A delay in the discharge of an infant being breastfed should not affect the discharge of the mother (e.g., an infant may be in a NICU for an extended period of time)

CRITERIA FOR 24-HOUR INFANT DISCHARGE: (2,3,4,23)
(ALL of the following must be met)

These guidelines represent implementation of the American Academy of Pediatrics guidelines and policies

ALL of the following criteria must be confirmed prior to discharge :

1. An uncomplicated antepartum, intrapartum, and postpartum course of both mother and infant

2. A single birth term infant (38 to 42 completed weeks) who is normally grown (2,500 to 4,500 grams) and who is examined by a physician prior to discharge and does not reveal any abnormalities that require continued hospitalization (i.e., medical problems such as jaundice, ductal-dependent cardiac lesions, gastrointestinal obstruction, infection, hypothermia, etc.)

3. The infant's vital signs are documented as being normal and stable for the 12 hours preceding discharge, including a respiratory rate below 60 per minute, a heart rate of 100 to 160 beats per minute, an axillary temperature of 36.1 degrees centigrade to 37 degrees centigrade in an open crib with appropriate clothing

4. The infant has urinated and passed at least one stool

5. There is no evidence of significant jaundice in the first 24 hours of life (use of noninvasive means of detecting jaundice may be useful)

6. The baby has completed at least two successful feedings, with documentation that the infant is able to coordinate sucking, swallowing, and breathing while feeding

7. A minimum of twelve hours of hospitalization during which time the infant has normal assessments of thermal homeostasis, cardiorespiratory, urinary, gastrointestinal, and neurologic systems and has fed successfully (demonstrated a normal suck and swallowing mechanism)

8. The mother's knowledge, ability, and confidence to provide adequate care for her infant are documented by the fact that she has received education through training sessions, including problems which may occur in the first three to five days of life (this education can be received through means of prenatal childbirth and infant care classes, prenatal visits with a pediatrician, or hospital-directed educational efforts)

9. The breast feeding mother-infant dyad should be assessed by trained staff regarding nursing position, latch-on, adequacy of swallowing, and mother's knowledge of urine and stool frequency, if applicable

10. The mother's knowledge, ability, and confidence to provide adequate cord, skin , and infant genital care, in addition to temperature assessment and measurement with thermometer, assessment of infant well-being and recognition of signs of illness and common infant problems, particularly jaundice, proper infant safety (e.g., proper use of a car seat and positioning for sleep) should be documented

11. Family members or other support person(s), including health care providers, such as the family pediatrician or his/her designees, familiar with newborn care and knowledgeable about lactation and the recognition of jaundice and dehydration are available to the mother and the infant for the first few days after discharge (this should include an appointment for the infant at 2-3 days of age with the pediatrician)

12. Laboratory data are available and reviewed, including maternal or cord blood serologic test for syphilis, if mandated by state law, cord blood (or infant blood) type and Coombs test if mother Rh negative or type O (a Coombs test should be performed on all infants if a screening test for irregular antibodies was not performed during pregnancy); and hemoglobin and blood sugar determinations as clinically indicated

13. initial hepatitis B vaccine has been given, if applicable, or a scheduled appointment for its administration has been made within the first week of life (refusal must be documented)

14. There is no evidence of excessive bleeding at the circumcision site for at least two hours and appropriate instructions are given after completion of circumcision, if applicable

15. Family, environmental, and social risk factors are assessed, including untreated parental substance abuse/positive urine toxicology results in the mother and infant, history of child abuse or neglect, mental illness in a parent who is in the home, lack of social support, particularly for single, first-time mothers, no fixed home, history of untreated domestic violence, particularly during this pregnancy, or teen mother, particularly if the aforementioned conditions apply

ALL of the following measures are recommended following 24-hour discharge :

1. Physical examination and infant assessment by a physician, physician-associated nurse practitioner, or outpatient clinic within 48 hours after discharge and as indicated thereafter (areas to evaluate are: nutrition of infant and mother, especially if breast-feeding, mother-infant interaction, infant behavior, urine output, bowel function, and jaundice)

2. An assessment of laboratory data obtained prior to discharge, if not done previously

3. According to state regulations, blood samples are obtained for phenylketonuria screening,

and blood or urine samples for metabolic diseases (e.g., thyroxine determinations for detection of congenital hypothyroidism), if not done previously or a repeat screening test performed during the follow-up visit if the initial test was performed before 24 hours of milk feeding

4. Plans confirmed for further health maintenance including arrangements for emergency treatment, immunizations, periodic evaluation, screening, and follow-up care by home health nursing visits

APR 16 1996

LEGISLATIVE INFORMATION OFFICE
119 N. CUSHMAN, SUITE 101
FAIRBANKS, AK 99701
452-4448

DATE: 4/12/96

Please accept the enclosed original(s) of written testimony for the

HHESS (SB193) teleconference scheduled on

4/11/96. A copy of this testimony was transmitted to your committee via fax.

Thank you,

Tina Hoff LIO

April 11, 1996

Dear Committee Members,

As a mother and a maternal child health nurse , I have closely watched the Federal Senate Bill 969 and development of Alaska Senate Bill 193, dealing with hospital stays for childbirth. Having watched the testimonials given in Washington DC, dialoged with peers, read the various newspaper articles and legislative actions of other states, I have come to th following conclusions:

- Problems associated with early discharge are related to poor management, follow up and access to health care.
- This legislation will not reduce infant mortality significantly in Alaska..
- Senate bill 193 will not change discharge criteria as it is worded.

The initial case which stimulated legislation in Washington, was a case in New Jersey. Michelle Bauman had her baby, went home and the baby developed a rash and began throwing up formula. She called the doctor several times and was reassured that "everything was OK". A visiting nurse was supposed to come by, but didn't. Within hours her baby died from Strep B infection. Two significant problems with her management were that ;1) that she was not screened prenatally for Strep B (an obstetric standard of practice) and 2) that she was not informed to return to the clinic for assessment and 3) the visiting nurse program was poorly coordinated. It is important for parents to know this information, so that they understand that it was not the time of discharge that created the problem. It was the fact that she didn't know that she should return to the hospital or clinic. Strep B infection can occur much later than 48 hours after birth. In fact, most babies who die in Alaska, do so after 28 days of age. Alaska's infant mortality problem is associated with a high postneonatal infant mortality rate that exceeds national levels by 30%. Another thing to consider is the problem of perinatal drug use ravaging Alaska's future. In 1989, a study at FMH revealed that 14.8% of women in labor had illicit drugs in their systems. This study was recently repeated in Anchorage revealing a 16% rate of infants exposed to drugs at birth. What does that tell you about the need of mothers and babies in Alaska? To me, it says that the needs are not only in the hospital, but in the community.

Taxpayers are funding health care for mothers and babies. A majority of care in the interior is provided by government sponsored health care including: Medicaid (50% of FMH OB patients), Champus (BACH) and other government employee programs So as legislation for extended stays seems impending, the question is "How can the health care dollars best be spent?" It is important for legislators to take this opportunity to learn about ways to improve outcomes for mothers and babies, to improve access to services and create opportunities for improved outcomes.

For example, at Bassett Army Community Hospital, when Certified Nurse Midwives were brought into the Obstetric practice, the cesarean rate dropped from 19% to 11% and it was reported that midwifery created cost savings of over a million dollars per year. That is information legislators, insurance companies and taxpayers need to know. Unfortunately, the majority of Medicaid clients in Alaska can not access nurse

midwifery care in Alaska, for a variety of reasons. Similarly, in hospital or freestanding birth centers which operate within the standards of the National Association of Childbearing Centers (NACC) can create cost savings and improve outcomes. A national study of over 10,000 births in birth centers, published in the New England Journal of Medicine in 1989 found outcomes such as a cesarean rate of 4.4% with infant mortality less than 2 per 1000 births (one fourth of the current US rate). Birth centers were initially developed as an alternative to home birth and may have stimulated early discl arge we see today. Unfortunately the process of care was poorly understood and in most cases never implemented. First, this early discharge program was not meant for all women. It was designed for low risk women, with midwifery primary care. It emphasized prenatal education, risk identification, risk reduction, referral for high risk and extensive home care. Unfortunately, when early discharge was introduced to Alaskans, no reimbursement for prenatal education (which could have at least prepared people for early discharge), nor any coordinated, timely, home care follow up programs were offered. So, my question is, why are you willing to pay $1000 for an added day in the hospital, but not $5 on programs, such as coordinated home care and prenatal education. Hospitals won't develop these programs until they are reimbursed. Furthermore, in order to understand what influences those 48 hours in the hospital, we must look at the whole spectrum of events in the childbearing year.

Specifically I would like to recommend:

- A forum for study of this problem be developed, which would include maternity care consumers, Certified Nurse Midwives, Certified Licensed Midwives, Physicians, Community Health Aides, hospital obstetric nurses, nurse managers, Public Health Nurses, legislators and hospital administrators or other interested individuals.
- Incentives for in hospital and freestanding Birth Cente.s which havae NACC Acccreditation be developed by insurance companies.
- Legislation introduced which would enable Certified Nurse Midwives to have hospital privileges just as other similar practitioners (like Family Practice MD's).
- Legislation which supports reimbursement for postpartum home care programs as an option to extended hospitalization.

The time of discharge should be a decision made between the health care provider and the mother, based upon criteria such as simply being a first time mother! Clearly, for problems to truly be eliminated, such as presented in SB 969 testimonies, follow up care programs must be developed. A 24 hour stay in the hospital won't do much good if mothers do not receive the education and support they deserve. That education and support should begin prenatally and continue into the home and into the community.

Sincerely yours,

Janet Thurston, RNC
436 Valley View Drive
Fairbanks, Alaska 99712
(907) 457-1164

INFANT MORTALITY

Infant deaths are defined as deaths which occur before an individual's first birthday. Infant mortality may be calculated by either of two methods: *birth cohort* or *death cohort*. The *birth cohort* method considers all babies born in a calendar year and determines the number of those babies who die before reaching their first birthday. The *death cohort* method compares the number of babies who die during a calendar year with the number of babies born during the same year.

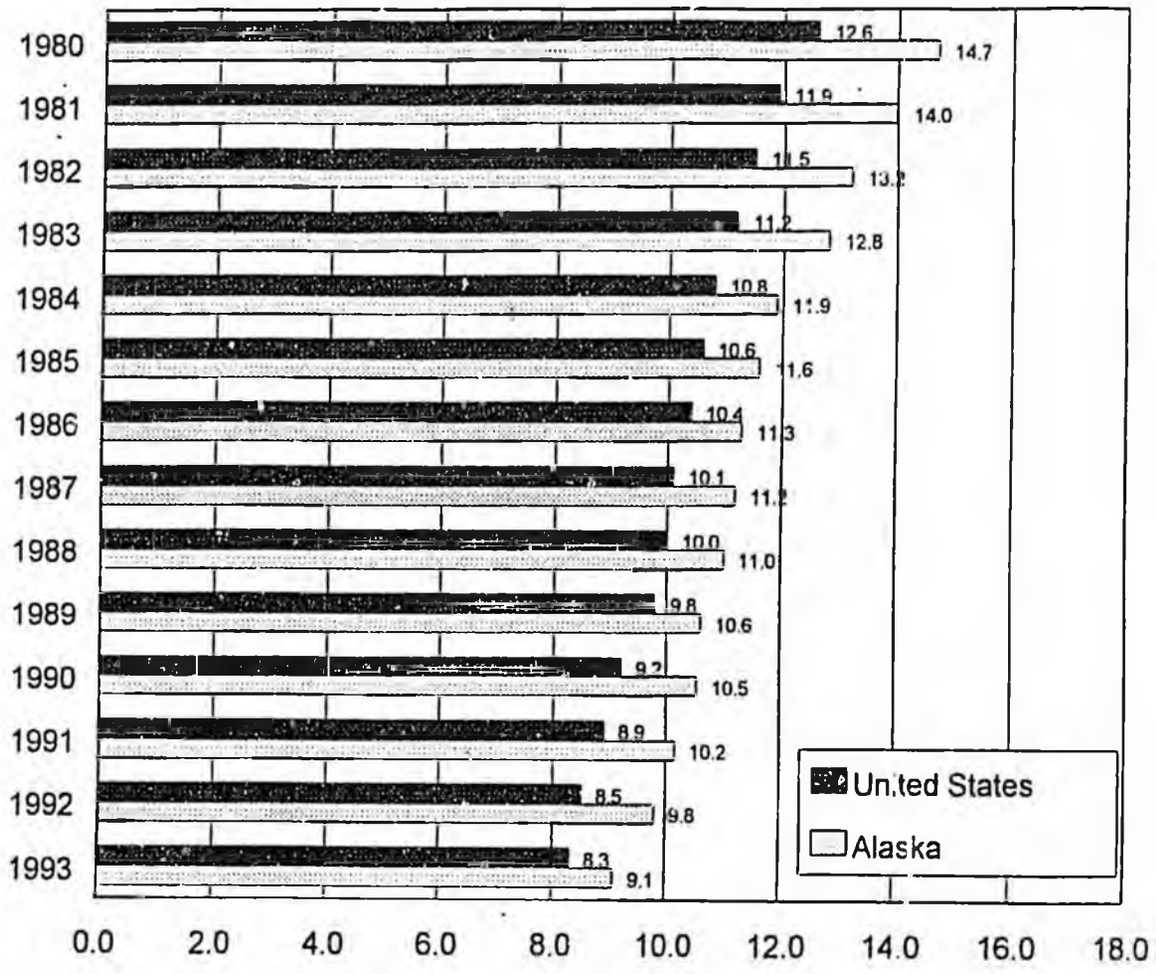
The birth cohort method is the most consistent calculation, since it analyzes deaths for a specific group of infants. When using the birth cohort method in this report, all infants born in calendar year 1992 are considered, whether the death occurred in 1992 or 1993. Birth cohort calculations are not included for 1993 in this report because not all 1994 death records were complete at the time this report was compiled.

The death cohort method is used in this report for calendar year 1993. Using this method, if an infant is born in 1992 and dies in 1993 before the first birthday, only the death would be counted. However, if an infant is born in 1993 and dies in 1994 before the first birthday, only the birth would be counted. If an infant is born and dies both within 1993, both events (birth and death) will be counted using the death cohort method.

The total number of infant deaths during 1993 was 90. This is a ten percent decrease from 100 infant deaths during 1992. Since relatively small changes in infant deaths can cause large fluctuations in the infant mortality rate (IMR) from one year to the next, Alaska's annual IMR is calculated on a five-year moving average. The 1989-1993 five-year average infant mortality rate was 9.1 deaths per 1,000 live births, down from 9.8 deaths per 1,000 live births for 1988-1992. The U.S. infant mortality rate of 8.3 deaths per 1,000 live births in 1993 decreased from 8.5 infant deaths per 1,000 live births in 1992.[1] Both the U.S. and Alaska infant mortality rates have been steadily decreasing in the last dozen years; however, the Alaska infant mortality rate has been decreasing more quickly than the U.S. rate. Consequently, the Alaska five-year moving average infant mortality rate for 1993 is now just 0.8 deaths per 1,000 above the U.S. 1993 rate. (See Chart 2.1 for a comparison of U.S. and Alaska infant mortality rates.)

1. National Center for Health Statistics, U.S. Department of Health and Human Services, "Annual Summary of Births, Marriages, Divorces, and Deaths: United States, 1993." *Monthly Vital Statistics Report*, Vol. 42, No. 13, October 11, 1994, p. 7.

CHART 2.1 INFANT MORTALITY RATES, ALASKA AND THE UNITED STATES, 1980-1993 (DEATH COHORT METHOD)



Alaska rates are five-year moving averages per 1,000 live births, based upon a death-cohort. United States rates are courtesy of the National Center for Health Statistics.

When analyzing infant mortality, a distinction is made between neonatal mortality and postneonatal mortality. Neonatal mortality is defined as infant deaths which occur before the 28th day of life. Postneonatal mortality is death which occurs from the 28th day and prior to the first birthday. While Alaska's infant mortality rate has decreased and is now closer to that of the United States', there is a large difference between neonatal and postneonatal rates. Alaska has a history of lower neonatal mortality rates than the nation (Chart 2.2), but a significantly higher rate of postneonatal mortality (Chart 2.3).

CHART 2.2 NEONATAL INFANT MORTALITY RATES, UNITED STATES AND ALASKA, 1985-1993 (DEATH COHORT METHOD)

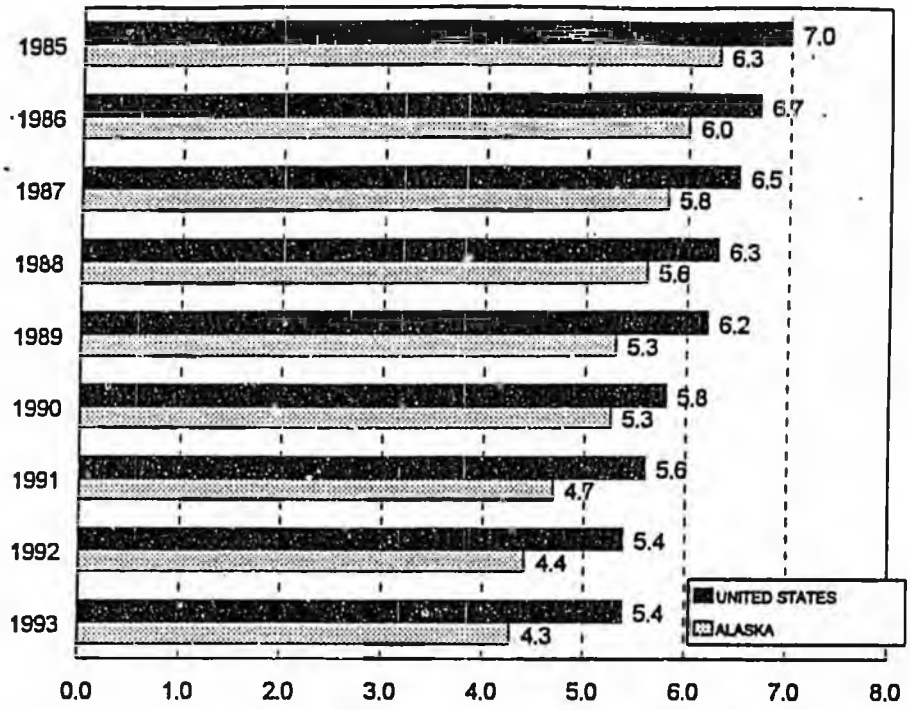
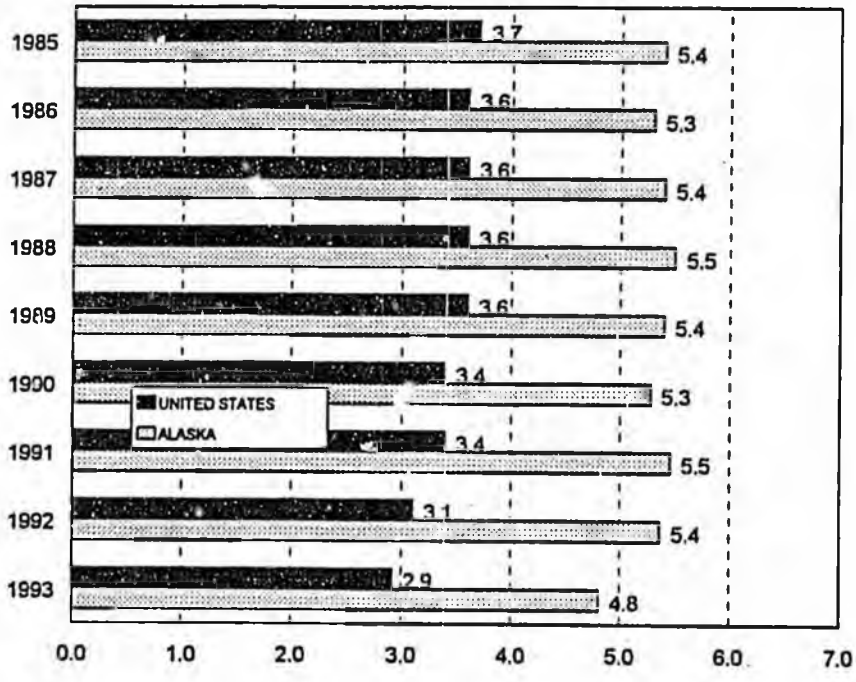


CHART 2.3 POSTNEONATAL INFANT MORTALITY RATES, UNITED STATES AND ALASKA, 1985-1993 (DEATH COHORT METHOD)



Alaska rates are five-year moving averages per 1,000 live births.

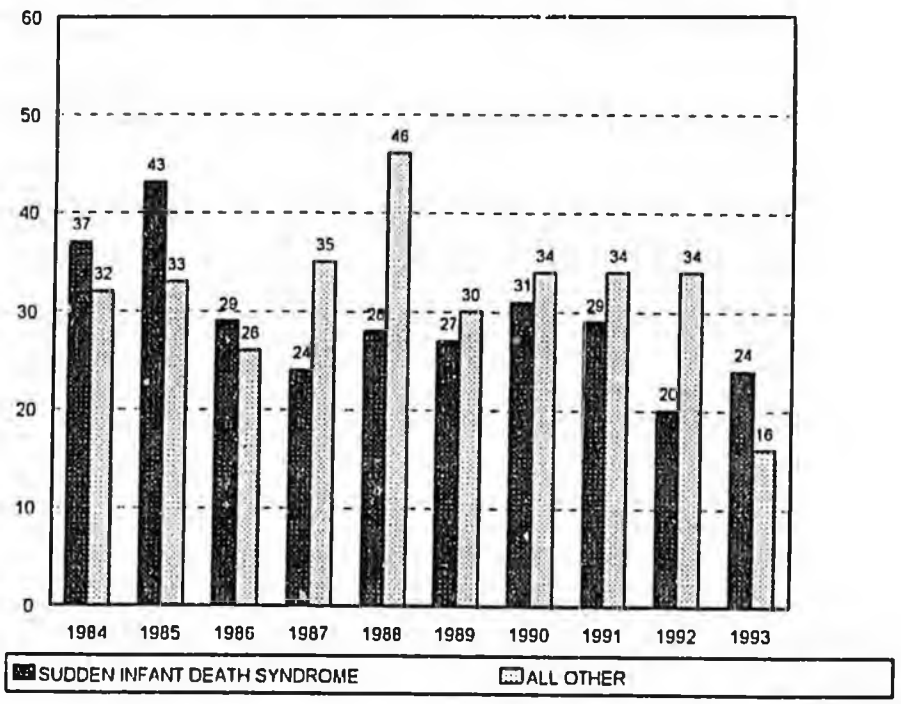
As shown in Table 2.7 on the previous page, the single greatest cause of postneonatal deaths is Sudden Infant Death Syndrome (SIDS). In the ten years from 1984 through 1993, SIDS accounted for 47.7 percent of all postneonatal deaths in Alaska. (See Chart 2.5 below.)

In the five-year period from 1989 through 1993, 134 infants died of SIDS, a rate of 2.3 per thousand live births. This compares with a rate of 1.2 deaths per thousand live births for the United States in 1992, the last year for which data are available.

Chart 2.5 (below) compares Sudden Infant Death Syndrome (SIDS) with all other causes of postneonatal deaths from 1984 through 1993. In 1984, 1985, 1986, and 1993, SIDS caused more neonatal deaths than all other causes combined. Table 2.8 illustrates that for all infant deaths, SIDS was the single leading cause of death in all years since 1989, with the exception of 1992 when congenital anomalies was the single leading cause of infant deaths.

In an effort to reduce SIDS deaths, researchers have attempted to identify potential causes. In 1991, New Zealand launched a "National Cot Death Prevention Program" which encouraged parents to place infants to sleep on their backs, promoted breast feeding, and discouraged parental smoking and bundling of the baby.[2] Similar programs were launched in other countries of the United Kingdom. Countries that have advocated side or back sleeping for infants have experienced large decreases in SIDS deaths.[3] Pediatricians do caution, however, that infants with craniofacial abnormalities and gastro-esophageal reflux should be placed in a prone sleeping position.[4]

CHART 2.5 SUDDEN INFANT DEATH SYNDROME (SIDS) COMPARED TO ALL OTHER CAUSES OF POSTNEONATAL DEATHS, ALASKA, 1984-1993 (DEATH COHORT METHOD)



2. Willinger, Marian, Ph.D., Hoffman, Howard J., MA, and Hartford, Robert B., PhD. "Infant Sleep Position and Risk for Sudden Infant Death Syndrome: Report of Meeting Held January 13 and 14, 1994, National Institutes of Health, Bethesda, MD," Pediatrics, Vol. 93, No. 5, May 1994, p. 814.
3. Ibid., p. 815.
4. Ibid., p. 817.

SB

244

No. 2

FISCAL NOTE

Bill Version: CS SB 244(FIN)

(S) Publish Date: 4/11/96

STATE OF ALASKA
1996 LEGISLATIVE SESSION

Revision Date: 4/11/96
Title: An act relating to state foundation aid and supplementary state aid for education
Sponsor: Rules Committee
Requester: Senate Finance Committee

Department Affected: Education
BRU: K-12
Component: Foundation

COMPONENT SERIAL NO. 141

Expenditures/Revenues: (Thousands of Dollars)

OPERATING	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS	20.2	20.2	20.2	20.2	20.2	20.2
MISCELLANEOUS						
TOTAL OPERATING	20.2	20.2	20.2	20.2	20.2	20.2
CAPITAL EXPENDITURES						
CHANGE IN REVENUES						

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF	20.2	20.2	20.2	20.2	20.2	20.2
1005 GF/Program Receipts						
1006 GF/MHTIA						
Other						
TOTAL	20.2	20.2	20.2	20.2	20.2	20.2

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

Estimate of current year (FY96) impact: $ 311.7

ANALYSIS: (Attach a separate page if necessary.)

Refer to attached spreadsheet for fiscal impact of sections 1 and 2 of the legislation. Section 3 contains a hold-harmless provision which provides school districts with the same level of foundation revenue they were entitled to prior to implementation of this legislation.

Prepared by: Eddy Jeans, Project Assistant
Phone: 465-8685
Division: School Finance
Date: April 11, 1996
Approved by Commissioner: Shirley J. Holloway
Shirley Holloway, Ph. D., Commissioner
Agency: Education
Date: April 11, 1996

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ALASKA DEPARTMENT OF F[illegible]CATION
FY96 FOUNDATION PROGRA...
CS SB244(FIN)

	Section 1	Section 2		Section 3
	96% Impact Aid	$500 per Adj. Unit	Net Adjustment	Hold Harmless
ADAK	0	0	0	0
ALASKA GATEWAY	(25,907)	45,040	19,133	0
ALEUTIAN REGION	(3,930)	5,005	1,075	0
ALEUTIANS EAST	0	0	0	0
ANCHORAGE	0	0	0	0
ANNETTE ISLANDS	(65,778)	22,795	(42,983)	42,983
BERING STRAIT	(258,696)	159,600	(99,096)	99,096
BRISTOL BAY	0	0	0	0
CHATHAM	(34,618)	26,840	(7,778)	7,778
CHUGACH	(10,227)	15,190	4,963	0
COPPER RIVER	(6,801)	45,935	39,134	0
CORDOVA	0	0	0	0
CRAIG	0	0	0	0
DELTA/GREELY	(51,764)	49,090	(2,674)	2,674
DENALI	0	0	0	0
DILLINGHAM	0	0	0	0
FAIRBANKS	0	0	0	0
GALENA	0	0	0	0
HAINES	0	0	0	0
HOONAH	0	0	0	0
HYDABURG	0	0	0	0
IDITAROD	(38,101)	47,895	9,794	0
JUNEAU	0	0	0	0
KAKE	0	0	0	0
KASHUNAMIUT	(27,656)	18,100	(9,556)	9,556
KENAI	0	0	0	0
KETCHIKAN	0	0	0	0
KLAWOCK	0	0	0	0
KODIAK	0	0	0	0
KUSPUK	(43,067)	46,345	3,278	0
LAKE AND PENINSULA	0	0	0	0
LOWER KUSKOKWIM	(304,641)	335,370	30,729	0
LOWER YUKON	(266	138,310	(128,359)	128,359
MAT-SU		0	0	0
NENANA	0	0	0	0
NOME	0	0	0	0
NORTH SLOPE	0	0	0	0
NORTHWEST ARCTIC	0	0	0	0
PELICAN	0	0	0	0
PETERSBURG	0	0	0	0
PRIBILOF	(21,162)	19,655	(1,507)	1,507
SITKA	0	0	0	0
SKAGWAY	0	0	0	0
SOUTHEAST	(27,339)	35,995	8,656	0
SOUTHWEST	(62,721)	61,195	(1,526)	1,526
ST. MARY'S	0	0	0	0
TANANA	0	0	0	0
UNALASKA	0	0	0	0
VALDEZ	0	0	0	0
WRANGELL	0	0	0	0
YAKUTAT	0	0	0	0
YUKON FLATS	(43,513)	53,700	10,187	0
YUKON/KOYUKUK	(57,362)	66,610	9,248	0
YUPIIT	(57,898)	39,705	(18,193)	18,193
TOTALS	($1,407,850)	$1,232,375	($175,475)	$311,672

	A	B	C	D
1	ALASKA DEPARTMENT OF EDUCATION			
2	PROJECTED FY97 FOUNDATION PROGRAM			
3	Revised based on CS SB244(FIN)			
4				
5		Section 1	Section 2	
6		96%	$500 per	Net
7		Impact Aid	Adj. Unit	Change
8				
9	ADAK	$0	$0	$0
10	ALASKA GATEWAY	22,832	44,245	21,413
11	ALEUTIAN REGION	3,421	4,670	1,249
12	ALEUTIANS EAST	0	0	0
13	ANCHORAGE	0	0	0
14	ANNETTE ISLANDS	60,980	22,525	(38,455)
15	BERING STRAIT	207,308	164,585	(42,723)
16	BRISTOL BAY	0	0	0
17	CHATHAM	39,095	27,360	(11,735)
18	CHUGACH	7,513	15,100	7,587
19	COPPER RIVER	4,835	44,615	39,780
20	CORDOVA	0	0	0
21	CRAIG	0	0	0
22	DELTA/GREELY	53,771	44,085	(9,686)
23	DENALI	0	0	0
24	DILLINGHAM	0	0	0
25	FAIRBANKS	0	0	0
26	GALENA	0	0	0
27	HAINES	0	0	0
28	HOONAH	0	0	0
29	HYDABURG	0	0	0
30	IDITAROD	34,842	49,335	14,493
31	JUNEAU	0	0	0
32	KAKE	0	0	0
33	KASHUNAMIUT	16,294	18,235	1,941
34	KENAI	0	0	0
35	KETCHIKAN	0	0	0
36	KLAWOCK	0	0	0
37	KODIAK	0	0	0
38	KUSPUK	33,342	48,580	15,238
39	LAKE AND PENN.	0	0	0
40	LOWER KUSKOKWIM	276,742	348,085	71,343
41	LOWER YUKON	196,640	137,715	(58,925)
42	MAT-SU	0	0	0
43	NENANA	0	0	0
44	NOME	0	0	0
45	NORTH SLOPE	0	0	0
46	NORTHWEST ARCTIC	0	0	0
47	PELICAN	0	0	0
48	PETERSBURG	0	0	0
49	PRIBILOF	22,345	19,235	(3,110)
50	SITKA	0	0	0
51	SKAGWAY	0	0	0
52	SOUTHEAST	27,657	34,035	6,378
53	SOUTHWEST	64,586	63,340	(1,246)
54	ST. MARY'S	0	0	0
55	TANANA	0	0	0
56	UNALASKA	0	0	0
57	VALDEZ	0	0	0
58	WRANGELL	0	0	0
59	YAKUTAT	0	0	0
60	YUKON FLATS	37,919	49,875	11,956
61	YUKON/KOYUKUK	60,000	65,200	5,200
62	YUPIIT	51,899	41,355	(10,544)
63				
64	TOTALS	$1,222,021	$1,242,175	$20,154

HOUSE COMMITTEE REPORT

(7)
Date Referred to Committee. April 17, 1996 FURTHER REFERRALS: Finance

Date of Committee Action: 4/30/96

The HEALTH, EDUCATION AND SOCIAL SERVICES Committee considered: CSSB 244(FIN) am

CS FOR SENATE BILL NO. 244(FIN) am CALCULATION OF STATE AID TO EDUCATION

"An Act relating to transportation of public school students; relating to school construction grants; relating to state foundation aid and supplementary state aid for education; and providing for an effective date."

recommends it be replaced with the following committee substitute HCS CS SB 244 (HES) [ ] the same title [X] a new title

[ ] additional referral to _____ Committee
[ ] attached amendment(s)

ADOPTS: _____ Letter of Intent

ATTACHES NEW FISCAL NOTE(s): (Dept) APPROVES PREVIOUS: (Dept/Date)

[ ] fiscal note(s) _____ [X] fiscal note(s) DOE/4-11-96

[ ] zero fiscal note(s) _____ [ ] zero fiscal note(s) _____

SIGNING WITH RECOMMENDATIONS	DP	DNP	NR	AM
			✓	
			✓	
	✓			
	✓			
	✓			
			✓	

CHAIR'S SIGNATURE Dan Bercle

HOUSE CS FOR CS FOR SENATE BILL NO. 244(HES)

IN THE LEGISLATURE OF THE STATE OF ALASKA

NINETEENTH LEGISLATURE - SECOND SESSION

BY THE HOUSE HEALTH, EDUCATION AND SOCIAL SERVICES COMMITTEE

Offered:
Referred:

Sponsor(s): SENATE RULES COMMITTEE BY REQUEST OF THE GOVERNOR

A BILL

FOR AN ACT ENTITLED

"An Act relating to school construction grants; relating to state foundation aid and supplementary state aid for education; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

*** Section 1.** AS 14.11.013(a) is amended to read:

(a) With regard to projects for which grants are requested under AS 14.11.011, the department shall

(1) annually review the six-year plans submitted by each district under AS 14.11.011(b) and recommend to the board a revised and updated six-year capital improvement project grant schedule that serves the best interests of the state and each district; in recommending projects for this schedule, the department shall verify that each proposed project meets the criteria established under AS 14.11.014(b) and qualifies as a project required to

(A) avert imminent danger or correct life-threatening situations;

(B) house students who would otherwise be unhoused; <u>for</u>

purposes of this subparagraph, students are considered unhoused if the students attend school in temporary facilities and the district has a population greater than 10,000;

(C) protect the structure of existing school facilities;

(D) correct building code deficiencies that require major repair or rehabilitation in order for the facility to continue to be used for the educational program;

(E) achieve an operating cost savings;

(F) modify or rehabilitate facilities for the purpose of improving the instructional program;

(G) meet an educational need not specified in (A) - (F) of this paragraph, identified by the department;

(2) prepare an estimate of the amount of money needed to finance each project;

(3) provide to the governor, by November 1, and to the legislature within the first 10 days of each regular legislative session, a revised and updated six-year capital improvement project grant schedule, together with a proposed schedule of appropriations.

* **Sec. 2.** AS 14.17.021 is repealed and reenacted to read:

Sec. 14.17.021. STATE FOUNDATION AID. (a) Beginning July 1, 1995, the amount of state foundation aid for which a city or borough school district may qualify in a fiscal year is calculated by subtracting from the basic need defined in (c) of this section the required local contributions under AS 14.17.025(a) and 90 percent of eligible federal impact aid for that fiscal year.

(b) Beginning July 1, 1995, the amount of state foundation aid for which a regional educational attendance area may qualify in a fiscal year is calculated by subtracting from the basic need defined in (c) of this section 96 percent of eligible federal impact aid for that fiscal year.

(c) The basic need of a school district is determined by multiplying the area cost differential of the district under AS 14.17.051 by the number of instructional units in the district under AS 14.17.031 and then multiplying that product by the

instructional unit value in AS 14.17.056.

(d) The department may make adjustments to a district's state foundation aid for a fiscal year to correct underpayments made in previous fiscal years.

*** Sec. 3.** AS 14.17 is amended by adding a new section to read:

Sec. 14.17.026. SUPPLEMENTARY STATE AID FOR REGIONAL EDUCATIONAL ATTENDANCE AREAS. Beginning July 1, 1995, in addition to the state foundation aid for which a regional educational attendance area may qualify under AS 14.17.021(b), a regional educational attendance area may qualify for supplementary state aid. The amount of supplementary state aid for which a regional educational attendance area may qualify in a fiscal year is calculated by multiplying the area cost differential of the regional educational attendance area under AS 14.17.051 by the number of instructional units in the regional educational attendance area determined under AS 14.17.031 and then multiplying that product by a unit allotment of $500.

*** Sec. 4.** TRANSITION. Notwithstanding the provisions of this Act, if, for fiscal year 1996, a city or borough school district or a regional educational attendance area would receive less foundation aid under this Act than the city or borough school district or regional educational attendance area would have received under AS 14.17 without enactment of this Act, the school district or attendance area is eligible to receive foundation aid for fiscal year 1996 equal to the amount that would have been received under AS 14.17 without the enactment of this Act.

*** Sec. 5.** Notwithstanding any other provision of law, AS 14.17 shall not be applied for funding public education after June 30, 1997.

*** Sec. 6.** Sections 2 - 4 of this Act are retroactive to July 1, 1995.

*** Sec. 7.** This Act takes effect immediately under AS 01.10.070(c).

HOUSE CONCURRENT RESOLUTION NO.

IN THE LEGISLATURE OF THE STATE OF ALASKA

NINETEENTH LEGISLATURE - SECOND SESSION

BY THE HOUSE HEALTH, EDUCATION AND SOCIAL SERVICES COMMITTEE

Introduced:
Referred:

A RESOLUTION

Suspending Uniform Rules 24(c), 35, 41(b), and 42(e) of the Alaska State Legislature concerning Senate Bill No. 244, relating to school construction grants and state aid for education.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

That under Rule 54 of the Uniform Rules of the Alaska State Legislature, the provisions of Rules 24(c), 35, 41(b), and 42(e) of the Uniform Rules, regarding changes to the title of a bill, are suspended in consideration of Senate Bill No. 244, relating to school construction grants and state aid for education.

TONY KNOWLES, GOVERNOR

GOLDBELT PLACE
801 WEST 10TH STREET, SUITE 200
JUNEAU, ALASKA 99801-1894

(907) 465-2800
FAX (907) 465-4156

DEPARTMENT OF EDUCATION

OFFICE OF THE COMMISSIONER

FAX TRANSMITTAL INFORMATION SHEET

DATE: 4/25 TIME: _____

TO: NAME: Lynne

AGENCY/OFFICE: Rep Bunde / Rep Toohey HESS Cmte

FAX PHONE NUMBER: 3759

COMMENTS: This is some backup for SB 244. Please add to committee members packets. Thank you. Kimberly

FROM: NAME: Kimberly Homme, Special Assistant

OFFICE TELEPHONE NUMBER: (907) 465-2803

OFFICE FAX NUMBER: (907) 465-4156

FINANCIAL CODING (CC & LC): _____

NUMBER OF PAGES INCLUDING COVER SHEET: 4

05-E13LH

DEPARTMENT OF EDUCATION
PUPIL TRANSPORTATION
4/24/96

THE FOLLOWING TABLE COMPARES ANCHORAGE SCHOOL DISTRICT TRANSPORTATION AT 100% OF ACTUAL AUDITED EXPENSES FOR FY95 FOR THE DISTRICT-OPERATED SYSTEM AS REPORTED TO THE DEPARTMENT IN THE DISTRICT'S STATEMENT OF OPERATIONS. THE NUMBERS OF STUDENTS TRANSPORTED AND DAILY MILES ARE AVERAGES COMPILED FROM MONTHLY TRANSPORTATION REPORTS SUBMITTED TO THE DEPARTMENT.

COST OF DISTRICT-OPERATED TRANSPORTATION IS HIGHER.

ANCHORAGE	FY95 COST	TOTAL ROUTE BUSES	AVERAGE DAILY COST PER BUS	STUDENTS TRANSPORTED DAILY	TOTAL DAILY MILES	ANNUAL COST PER STUDENT	APPROX. COST PER MILE
DISTRICT-OPERATED	$5,801,243.82	81	$409.26	6,079.56	3,136	$954.22	$10.57
CONTRACTED	$5,228,172.98	158	$189.08	10,180.66	5,939	$513.54	$5.03
TOTALS	$11,029,416.80	239		16,260.22	9,075		

THIS TABLE COMPARES ANCHORAGE SCHOOL DISTRICT TRANSPORTATION USING THE CURRENT METHOD OF REIMBURSING THE DISTRICT-OPERATED PORTION AT 66.83% OF ACTUAL AUDITED EXPENSES.

COST OF DISTRICT-OPERATED TRANSPORTATION IS STILL HIGHER AFTER PERCENTAGE IS APPLIED.

ANCHORAGE	FY95 REIMBURSEMENT	TOTAL ROUTE BUSES	AVERAGE DAILY COST PER BUS	STUDENTS TRANSPORTED DAILY	TOTAL DAILY MILES	ANNUAL COST PER STUDENT	APPROX. COST PER MILE
DISTRICT-OPERATED	$3,876,971.24	81	$273.51	6,079.56	3,136	$637.71	$7.06
CONTRACTED	$5,228,172.98	158	$189.08	10,180.66	5,939	$513.54	$5.03
TOTALS	$9,105,144.22	239		16,260.22	9,075		

"TOTAL ROUTE BUSES" INCLUDES BOTH REGULAR AND SPECIAL EDUCATION BUSES FOR WHICH THE DISTRICT RECEIVES STATE REIMBURSEMENT.

"AVERAGE DAILY COST PER BUS" IS BASED ON PROVIDING TRANSPORTATION 175 DAYS.

DEPARTMENT OF EDUCATION
PUPIL TRANSPORTATION
FY97 PROJECTION
UPDATED 4/24/96

ANCHORAGE DISTRICT-OPERATED TRANSPORTATION REIMBURSED AT 100% OF AUDITED EXPENSES.

DISTRICT	FY97 PROJECTED ENTITLEMENT	Gov.'s Budget FY96 less 8% 84.02% Proration	Difference	Senate Finance FY96 Funding Level 91.33% Proration	Difference
ADAK	$0.00	$0.00	$0.00	$0.00	$0.00
ALASKA GATEWAY	443,224.55	372,398.99	70,825.56	404,781.51	38,443.04
ALEUTIANS EAST	46,848.49	39,362.28	7,486.21	42,785.09	4,063.40
ANCHORAGE	12,280,315.00	10,317,968.41	1,962,346.59	11,215,182.97	1,065,132.03
ANNETTE ISLAND	22,011.00	18,493.73	3,517.27	20,101.88	1,909.12
BERING STRAITS	37,312.48	31,350.09	5,962.39	34,076.19	3,236.29
BRISTOL BAY	214,502.00	180,225.41	34,276.59	195,897.19	18,604.81
CHATHAM	15,173.14	12,748.53	2,424.61	13,857.10	1,316.04
COPPER RIVER	551,521.50	463,390.51	88,130.99	503,685.33	47,836.17
CORDOVA	56,636.35	47,586.08	9,050.27	51,724.00	4,912.35
CRAIG	17,426.45	14,641.77	2,784.68	15,914.97	1,511.48
DELTA/GREELY	902,423.61	758,219.82	144,203.78	824,151.98	78,271.63
DENALI	287,646.75	241,681.92	45,964.83	262,697.73	24,949.02
DILLINGHAM	313,004.13	262,987.28	50,016.84	285,855.74	27,148.38
FAIRBANKS	5,299,564.00	4,452,714.28	846,849.72	4,839,906.79	459,657.21
GALENA	37,038.62	31,119.99	5,918.63	33,826.07	3,212.54
HAINES	163,022.01	136,971.72	26,050.29	148,882.31	14,139.70
HOONAH	36,579.82	30,734.51	5,845.31	33,407.07	3,172.75
HYDABURG	3,940.46	3,310.79	629.67	3,598.69	341.78
IDITAROD	44,996.26	37,806.03	7,190.23	41,093.51	3,902.75
JUNEAU	1,365,794.55	1,147,545.89	218,248.66	1,247,332.48	118,462.07
KAKE	26,412.26	22,191.68	4,220.58	24,121.39	2,290.88
KASHUNAMIUT	2,939.80	2,470.03	469.77	2,684.81	254.98
KENAI PENINSULA	3,267,822.03	2,745,636.77	522,185.26	2,984,387.78	283,434.25
KETCHIKAN	843,932.30	709,076.20	134,857.10	770,733.91	73,198.39
KLAWOCK	7,261.99	6,101.55	1,160.44	6,632.12	629.87
KODIAK	705,612.95	592,858.75	112,754.21	644,411.68	61,201.28
KUSPUK	105,397.92	88,555.75	16,842.18	96,256.24	9,141.68
LAKE & PENINSULA	105,504.24	88,645.07	16,859.17	96,353.34	9,150.90
LOWER KUSKOKWIM	260,185.16	218,608.59	41,576.58	237,618.03	22,567.14
LOWER YUKON	24,378.28	20,482.72	3,895.55	22,263.83	2,114.45
MAT-SU	6,050,745.00	5,083,859.47	966,885.53	5,525,934.17	524,810.83
NENANA	88,606.36	74,447.41	14,158.95	80,921.10	7,685.26
NOME	203,712.63	171,160.14	32,552.49	186,043.63	17,669.00
NORTH SLOPE	365,032.46	306,701.70	58,330.77	333,371.41	31,661.06
PELICAN	1,633.64	1,372.59	261.05	1,491.95	141.69
PETERSBURG	120,959.05	101,630.26	19,328.79	110,467.68	10,491.37
SITKA	372,525.03	312,996.98	59,528.05	340,214.10	32,310.93
SKAGWAY	5,999.50	5,040.80	958.70	5,479.13	520.37
SOUTHEAST ISLAND	168,048.73	141,195.20	26,853.53	153,473.04	14,575.69
SOUTHWEST REGION	62,207.88	52,267.30	9,940.58	56,812.29	5,395.59
TANANA	8,563.34	7,194.95	1,368.39	7,820.60	742.74
UNALASKA	166,217.26	139,656.39	26,560.87	151,800.42	14,416.84
VALDEZ	293,381.75	246,500.49	46,881.26	267,935.31	25,446.44
WRANGELL	134,125.52	112,692.78	21,432.74	122,492.16	11,633.37
YAKUTAT	56,079.45	47,118.17	8,961.29	51,215.40	4,864.05
YUKON FLATS	64,281.23	54,009.34	10,271.89	58,705.81	5,575.43
YUKON/KOYUKUK	110,742.29	93,046.10	17,696.19	101,137.07	9,605.22
GROWTH FACTOR*	200,000.00	168,040.78	31,959.22	182,653.02	17,346.98
TOTALS	$35,951,289.21	$30,214,815.00	$5,746,474.21	$32,842,190.00	$3,119,099.21

* GROWTH FACTOR IS AN ESTIMATED AMOUNT TO COVER ADDITIONAL COSTS DUE TO ENROLLMENT INCREASES AND POPULATION SHIFTS. PROJECTED ENTITLEMENTS INCLUDE NEW CONTRACTS.

FAIRBANKS PROJECTED COST INCLUDES ONE NONPUBLIC BUS.

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DEPARTMENT OF EDUCATION
PUPIL TRANSPORTATION
FY97 PROJECTION
UPDATED 4/24/96

ANCHORAGE DISTRICT-OPERATED TRANSPORTATION REIMBURSED USING THE CURRENT METHOD OF 66.83% OF AUDITED EXPENSES.

DISTRICT	FY97 PROJECTED ENTITLEMENT	Gov.'s Budget FY96 less 8% 88.05% Proration	Difference	Senate Finance FY96 Funding Level 96.68% Proration	Difference
ADAK	$0.00	$0.00	$0.00	$0.00	$0.00
ALASKA GATEWAY	443,224.55	394,236.49	48,988.06	428,517.92	14,706.63
ALEUTIANS EAST	46,848.49	41,670.49	5,178.00	45,294.01	1,554.48
ANCHORAGE	10,288,352.00	9,161,216.32	1,137,135.68	9,946,974.19	341,377.81
ANNETTE ISLAND	22,011.00	19,578.20	2,432.80	21,280.65	730.35
BERING STRAITS	37,312.48	33,188.46	4,124.02	36,074.41	1,238.07
BRISTOL BAY	214,502.00	190,793.84	23,708.16	207,384.61	7,117.39
CHATHAM	15,173.14	13,496.10	1,677.03	14,669.68	503.46
COPPER RIVER	551,521.50	490,563.75	60,957.75	533,221.46	18,300.03
CORDOVA	56,636.35	50,376.53	6,259.82	54,757.10	1,879.25
CRAIG	17,426.45	15,500.37	1,926.08	16,848.22	578.23
DELTA/GREELY	902,423.61	802,681.87	99,741.74	872,480.29	29,943.32
DENALI	287,646.75	255,854.16	31,792.59	278,102.34	9,544.41
DILLINGHAM	313,004.13	278,408.87	34,595.25	302,618.34	10,385.79
FAIRBANKS	5,299,564.00	4,713,821.67	585,742.33	5,123,719.17	175,844.83
GALENA	37,038.62	32,944.87	4,093.75	35,809.64	1,228.98
HAINES	163,022.01	145,003.75	18,018.25	157,612.77	5,409.23
HOONAH	36,579.82	32,536.78	4,043.04	35,366.06	1,213.75
HYDABURG	3,940.46	3,504.94	435.53	3,809.71	130.75
IDITAROD	44,996.26	40,022.98	4,973.28	43,503.24	1,493.02
JUNEAU	1,365,794.55	1,214,838.04	150,956.51	1,320,476.12	45,318.43
KAKE	26,412.26	23,493.00	2,919.25	25,535.87	876.39
KASHUNAMIUT	2,939.80	2,614.87	324.93	2,842.25	97.55
KENAI PENINSULA	3,267,822.03	2,906,641.05	361,180.98	3,159,392.43	108,429.60
KETCHIKAN	843,932.30	750,655.41	93,276.90	815,929.78	28,002.52
KLAWOCK	7,261.99	6,459.35	802.64	7,021.03	240.96
KODIAK	705,612.95	627,824.01	77,988.94	682,200.01	23,412.94
KUSPUK	105,397.92	93,748.66	11,649.27	101,900.72	3,497.21
LAKE & PENINSULA	105,504.24	93,843.23	11,661.02	102,003.50	3,500.74
LOWER KUSKOKWIM	260,185.16	231,427.80	28,757.36	251,551.96	8,633.20
LOWER YUKON	24,378.28	21,683.83	2,694.45	23,569.38	808.90
MAT-SU	6,050,745.00	5,381,977.25	668,767.75	5,849,975.23	200,769.77
NENANA	88,606.36	78,813.01	9,793.35	85,666.31	2,940.05
NOME	203,712.63	181,196.98	22,515.65	196,953.24	6,759.39
NORTH SLOPE	365,032.46	324,686.70	40,345.77	352,920.32	12,112.14
PELICAN	1,633.64	1,453.08	180.56	1,579.44	54.21
PETERSBURG	120,959.05	107,569.87	13,389.18	116,945.51	4,013.54
SITKA	372,525.03	331,351.14	41,173.89	360,164.28	12,360.75
SKAGWAY	5,999.50	5,336.40	663.10	5,800.43	199.07
SOUTHEAST ISLAND	168,048.73	149,474.89	18,573.84	162,472.70	5,576.02
SOUTHWEST REGION	62,207.88	55,332.26	6,875.62	60,143.76	2,064.12
TANANA	8,563.34	7,616.86	946.48	8,279.20	284.14
UNALASKA	166,217.26	147,845.84	18,371.41	160,702.00	5,515.25
VALDEZ	293,381.75	260,955.29	32,426.46	283,647.05	9,734.70
WRANGELL	134,125.52	119,301.09	14,824.43	129,675.10	4,450.42
YAKUTAT	56,079.45	49,881.18	6,198.27	54,218.67	1,860.77
YUKON FLATS	64,281.23	57,176.45	7,104.78	62,148.32	2,132.92
YUKON/KOYUKUK	110,742.29	98,502.33	12,239.96	107,067.75	3,674.54
GROWTH FACTOR*	200,000.00	177,894.70	22,105.30	193,363.80	6,636.20
TOTALS	$33,969,326.21	$30,214,815.00	$3,754,511.21	$32,842,190.00	$1,127,136.21

* GROWTH FACTOR IS AN ESTIMATED AMOUNT TO COVER ADDITIONAL COSTS DUE TO ENROLLMENT INCREASES AND POPULATION SHIFTS. PROJECTED ENTITLEMENTS INCLUDE NEW CONTRACTS.

FAIRBANKS PROJECTED COST INCLUDES ONE NONPUBLIC BUS

$PTRANS\97PROJ.XLS

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Anchorage School District
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TO: Representative Con Bunde
Representative Norm Rokeberg
Representative Cynthia Toohey

Subject: Proposed Pupil-Transportation Amendment to CS FOR No. SB 244 (FIN) am

Date: April 23, 1996

The Anchorage School District strongly opposes the following amendment to CS for Senate Bill No. 244 (FIN) am which passed in HHESS this afternoon:

> On page 1, Amend line 10 to read:
> shall provide the same daily cost [level of] reimbursement per bus for transportation provided on a

This amendment would result, in the words of DOE's attached fiscal note, " in reduced reimbursement to the Anchorage School District and a net savings to the state general fund.

The original intent of adding pupil transportation to SB 244 was to rectify an inequity in transportation reimbursement to the Anchorage School District which has been occurring throughout the past decade.

We strongly urge that the following language be substituted for the above-mentioned amendment.

> On page 1, Amend line 10 and 11 to read as follows:
>
> shall **reimburse school districts for district operated pupil transportation routes 100%, less 50% for hazardous** [provide the same daily cost reimbursement per bus] for transportation provided on

The Anchorage School District has been diligent in reducing costs for district operated services. During the past several years, the cost of contracted transportation has been rising at a higher rate than District operated Services.

The current language in the bill regarding pupil transportation does not correct past or current inequities and is unacceptable to the Anchorage School District.

We do not believe that is the intent of the Anchorage Caucus to further reduce pupil transportation funding to the Anchorage School District. Please rectify the problem.

Steve Kalmes, director of pupil transportation, will be more than happy to talk with each of you regarding this issue. He can be reached at 563-3022.

We are also prepared to testify on this issue before the Legislature if it should be necessary.

Thank you!

FISCAL NOTE

STATE OF ALASKA
1996 LEGISLATIVE SESSION

BILL NO. CSSB 244 (FIN) am

Revision Date: 4/23/96

Department Affected: Education

Title: An Act relating to state foundation aid and supplementary state aid for education; transportation of public school students; school construction grants

Component: Pupil Transportation

Sponsor: Senate Rules Committee by Request

Requester: House HESS Committee

COMPONENT SERIAL NO. 144

Expenditures/Revenues: (Thousands of Dollars)

OPERATING	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS	$1,992.0	$2,031.8	$2,072.5	$2,113.9	$2,156.2	$2,199.3
MISCELLANEOUS						
TOTAL OPERATING	$1,992.0	$2,031.8	$2,072.5	$2,113.9	$2,156.2	$2,199.3
CAPITAL EXPENDITURES	0.0					
CHANGE IN REVENUES	0.0					

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF	$1,992.0	$2,031.8	$2,072.5	$2,113.9	$2,156.2	$2,199.3
1005 GF/Program Receipts						
1006 GP/MHTAA						
Other						
TOTAL	$1,992.0	$2,031.8	$2,072.5	$2,113.9	$2,156.2	$2,199.3

POSITIONS:

FULL-TIME	0					
PART-TIME	0					
TEMPORARY	0					

Estimate of current year (FY96) impact: $ 2,050,243

ANALYSIS: (Attach a separate page if necessary.)
The fiscal impact noted above is based on the assumption that Anchorage district-operated pupil transportation would be reimbursed at 100%, instead of the current 66.83%. An inflation factor of 2% is added to subsequent years.

Another interpretation of the language of this amendment is that the district-operated school buses will be reimbursed at the same daily rate established by pupil transportation contracts in the school district. This interpretation would result in reduced reimbursement to Anchorage School District and a net savings to the state general fund.

The effective date of the bill will cause a proration of pupil transportation in FY96.

Prepared by: Bill Wright, Pupil Transportation Administrator
Phone: 465-8687
Division: School Finance
Date: 4/23/96
Approved by Commissioner:
Richard S. Cross, Deputy Commissioner
Agency: Education
Date: 4/23/96

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Page 1 of 1

Alaska Department of Education
Sectional Analysis for Foundation Formula Legislation

SB 244: "An Act relating to state foundation aid and supplementary state aid for education; relating to transportation of public school students; relating to school construction grants; and providing for an effective date."

Section 1. Section 1 requires the department to reimburse district operated transportation services at the same level as contracted transportation services.

Section 2. Section 2 establishes in statute the department's policy which considers students in temporary facilities as "unhoused" students for the purposes of evaluating capital improvement projects.

Section 3. Section 3 of the bill would amend AS 14.17.021 by adding a new subsection applicable only to regional educational attendance areas (REAAs). In calculating state foundation aid for REAAs, 96% of eligible federal impact aid will be deducted from basic need. Calculation of foundation aid for city and borough school districts will remain unchanged, with 90% of eligible impact aid deducted. The 96% deduction for REAAs recognizes that no required local contribution is deducted from REAAs' basic need. The savings to the state, which results from the increased impact aid deduction, will cover the majority of the cost to implement the supplementary aid to REAAs set out in section 4 of this bill.

Section 4. Subsection (a) creates a new section of statute to provide supplementary aid to REAAs based on a flat rate per adjusted instructional unit. The flat rate is referred to as the unit allotment. Initially the unit allotment is set at $500.00 per adjusted unit. This amount will increase the value of the adjusted units in REAAs so that disparity of revenues between the 5% and 95% percentiles of districts will be 20%, the maximum allowable under the new federal impact aid statutes.

Section 5. Section 5 contains transition language, or a "hold-harmless" provision, which provides school districts with the same level of foundation revenue they were entitled to prior to implementation of this legislation.

Section 6. AS 14.17, the foundation program, shall not be applied for funding public education after June 30, 1997.

Section 7. Establishes a July 1, 1995 effective date for sections 3-5.

Section 8. The legislation takes effect immediately after receiving the Governor's signature.

FISCAL NOTE

STATE OF ALASKA
1996 LEGISLATIVE SESSION

BILL NO. CSSB244(FIN) am

Revision Date: 4/23/96
Department Affected: Education
Title: An act relating to state foundation aid and supplementary state aid for education; school construction grants; transportation of public school students
BRU: K-12
Component: Foundation
Sponsor: Rules Committee by Request
Requester: House HESS Committee
COMPONENT SERIAL NO. 141

Expenditures/Revenues: (Thousands of Dollars)

OPERATING	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS	20.2	20.2	20.2	20.2	20.2	20.2
MISCELLANEOUS						
TOTAL OPERATING	20.2	20.2	20.2	20.2	20.2	20.2
CAPITAL EXPENDITURES						
CHANGE IN REVENUES						

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF	20.2	20.2	20.2	20.2	20.2	20.2
1005 GF/Program Receipts						
1006 GF/MHTIA						
Other						
TOTAL	20.2	20.2	20.2	20.2	20.2	20.2

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

Estimate of current year (FY96) impact: $ 311.7

ANALYSIS: (Attach a separate page if necessary.)

Refer to attached spreadsheet for fiscal impact of sections 3 and 4 of the legislation. Section 5 contains a hold-harmless provision which provides school districts with the same level of foundation revenue they were entitled to prior to implementation of this legislation.

Prepared by: Eddy Jeans, Project Assistant
Phone: 465-8685
Division: School Finance
Date: April 23, 1996
Approved by Commissioner:
Richard S. Cross, Deputy Commissioner
Agency: Education
Date: April 23, 1996

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ALASKA DEPARTMENT OF EDUCATION
FY96 FOUNDATION PROGRAM
CS SB244(FIN) am

	Section 3	Section 4		Section 5
	96% Impact Aid	$500 per Adj. Unit	Net Adjustment	Hold Harmless
ADAK	0	0	0	0
ALASKA GATEWAY	(25,907)	45,040	19,133	0
ALEUTIAN REGION	(3,930)	5,005	1,075	0
ALEUTIANS EAST	0	0	0	0
ANCHORAGE	0	0	0	0
ANNETTE ISLANDS	(65,778)	22,795	(42,983)	42,983
BERING STRAIT	(258,696)	159,600	(99,096)	99,096
BRISTOL BAY	0	0	0	0
CHATHAM	(34,618)	26,840	(7,778)	7,778
CHUGACH	(10,227)	15,190	4,963	0
COPPER RIVER	(6,801)	45,935	39,134	0
CORDOVA	0	0	0	0
CRAIG	0	0	0	0
DELTA/GREELY	(51,764)	49,090	(2,674)	2,674
DENALI	0	0	0	0
DILLINGHAM	0	0	0	0
FAIRBANKS	0	0	0	0
GALENA	0	0	0	0
HAINES	0	0	0	0
HOONAH	0	0	0	0
HYDABURG	0	0	0	0
IDITAROD	(38,101)	47,895	9,794	0
JUNEAU	0	0	0	0
KAKE	0	0	0	0
KASHUNAMIUT	(27,656)	18,100	(9,556)	9,556
KENAI	0	0	0	0
KETCHIKAN	0	0	0	0
KLAWOCK	0	0	0	0
KODIAK	0	0	0	0
KUSPUK	(43,067)	46,345	3,278	0
LAKE AND PENINSULA	0	0	0	0
LOWER KUSKOKWIM	(304,641)	335,370	30,729	0
LOWER YUKON	(266,669)	138,310	(128,359)	128,359
MAT-SU	0	0	0	0
NENANA	0	0	0	0
NOME	0	0	0	0
NORTH SLOPE	0	0	0	0
NORTHWEST ARCTIC	0	0	0	0
PELICAN	0	0	0	0
PETERSBURG	0	0	0	0
PRIBILOF	(21,162)	19,655	(1,507)	1,507
SITKA	0	0	0	0
SKAGWAY	0	0	0	0
SOUTHEAST	(27,339)	35,995	8,656	0
SOUTHWEST	(62,721)	61,195	(1,526)	1,526
ST. MARY'S	0	0	0	0
TANANA	0	0	0	0
UNALASKA	0	0	0	0
VALDEZ	0	0	0	0
WRANGELL	0	0	0	0
YAKUTAT	0	0	0	0
YUKON FLATS	(43,513)	53,700	10,187	0
YUKON/KOYUKUK	(57,362)	66,610	9,248	0
YUPIIT	(57,898)	39,705	(18,193)	18,193
TOTALS	($1,407,850)	$1,232,375	($175,475)	$311,672

	A	B	C	D
1	ALASKA DEPARTMENT OF EDUCATION			
2	PROJECTED FY97 FOUNDATION PROGRAM			
3	Revised based on CS SB244(FIN) am			
4				
5		Section 3	Section 4	
6		96%	$500 per	Net
7		Impact Aid	Adj. Unit	Change
8				
9	ADAK	$0	$0	$0
10	ALASKA GATEWAY	22,832	44,245	21,413
11	ALEUTIAN REGION	3,421	4,670	1,249
12	ALEUTIANS EAST	0	0	0
13	ANCHORAGE	0	0	0
14	ANNETTE ISLANDS	60,980	22,525	(38,455)
15	BERING STRAIT	207,308	164,585	(42,723)
16	BRISTOL BAY	0	0	0
17	CHATHAM	39,095	27,360	(11,735)
18	CHUGACH	7,513	15,100	7,587
19	COPPER RIVER	4,835	44,615	39,780
20	CORDOVA	0	0	0
21	CRAIG	0	0	0
22	DELTA/GREELY	53,771	44,085	(9,686)
23	DENALI	0	0	0
24	DILLINGHAM	0	0	0
25	FAIRBANKS	0	0	0
26	GALENA	0	0	0
27	HAINES	0	0	0
28	HOONAH	0	0	0
29	HYDABURG	0	0	0
30	IDITAROD	34,842	49,335	14,493
31	JUNEAU	0	0	0
32	KAKE	0	0	0
33	KASHUNAMIUT	16,294	18,235	1,941
34	KENAI	0	0	0
35	KETCHIKAN	0	0	0
36	KLAWOCK	0	0	0
37	KODIAK	0	0	0
38	KUSPUK	33,342	48,580	15,238
39	LAKE AND PENN.	0	0	0
40	LOWER KUSKOKWIM	276,742	348,085	71,343
41	LOWER YUKON	196,640	137,715	(58,925)
42	MAT-SU	0	0	0
43	NENANA	0	0	0
44	NOME	0	0	0
45	NORTH SLOPE	0	0	0
46	NORTHWEST ARCTIC	0	0	0
47	PELICAN	0	0	0
48	PETERSBURG	0	0	0
49	PRIBILOF	22,345	19,235	(3,110)
50	SITKA	0	0	0
51	SKAGWAY	0	0	0
52	SOUTHEAST	27,657	34,035	6,378
53	SOUTHWEST	64,586	63,340	(1,246)
54	ST. MARY'S	0	0	0
55	TANANA	0	0	0
56	UNALASKA	0	0	0
57	VALDEZ	0	0	0
58	WRANGELL	0	0	0
59	YAKUTAT	0	0	0
60	YUKON FLATS	37,919	49,875	11,956
61	YUKON/KOYUKUK	60,000	65,200	5,200
62	YUPIIT	51,899	41,355	(10,544)
63				
64	TOTALS	$1,222,021	$1,242,175	$20,154

FISCAL NOTE

STATE OF ALASKA
1996 LEGISLATIVE SESSION

BILL NO. CSSB 244 (FIN) am

Revision Date: 4/23/96

Department Affected: Education

Title: An Act relating to state foundation aid and supplementary state aid for education; transportation of public school students; school construction grants

Component: Pupil Transportation

Sponsor: Senate Rules Committee by Request

Requester: House HESS Committee

COMPONENT SERIAL NO. 144

Expenditures/Revenues: (Thousands of Dollars)

OPERATING	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS	$1,992.0	$2,031.8	$2,072.5	$2,113.9	$2,156.2	$2,199.3
MISCELLANEOUS						
TOTAL OPERATING	$1,992.0	$2,031.8	$2,072.5	$2,113.9	$2,156.2	$2,199.3
CAPITAL EXPENDITURES	0.0					
CHANGE IN REVENUES	0.0					

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF	$1,992.0	$2,031.8	$2,072.5	$2,113.9	$2,156.2	$2,199.3
1005 GF/Program Receipts						
1006 GF/MHTIA						
Other						
TOTAL	$1,992.0	$2,031.8	$2,072.5	$2,113.9	$2,156.2	$2,199.3

POSITIONS:

FULL-TIME	0					
PART-TIME	0					
TEMPORARY	0					

Estimate of current year (FY96) impact: $ 2,050,243

ANALYSIS: (Attach a separate page if necessary.)
The fiscal impact noted above is based on the assumption that Anchorage district-operated pupil transportation would be reimbursed at 100%, instead of the current 66.83%. An inflation factor of 2% is added to subsequent years.

Another interpretation of the language of this amendment is that the district-operated school buses will be reimbursed at the same daily rate established by pupil transportation contracts in the school district. This interpretation would result in reduced reimbursement to Anchorage School District and a net savings to the state general fund.

The effective date of the bill will cause a proration of pupil transportation in FY96.

Prepared by: Bill Wright, Pupil Transportation Administrator — Phone: 465-8687
Division: School Finance — Date: 4/23/96
Approved by Commissioner: [signature] — Richard S. Cross, Deputy Commissioner
Agency: Education — Date: 4/23/96

PREPARER TO PROVIDE ALL DISTRIBUTION COPIES TO GOVERNOR'S LEGISLATIVE OFFICE

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Passed

Amendment #2

CS for SB 244(FIN) am

On page 1, Amend line 10 to read:
shall provide the same <u>daily cost</u> [level of] reimbursement <u>per bus</u> for transportation provided on a

Anchorage School District

4600 DeBarr Road
P.O. Box 196614
Anchorage, Alaska 99519-6614
(907) 333-8561

March 13, 1996

The Honorable Shirley Holloway
Commissioner of Education
State of Alaska Department of Education
Goldbelt Place
801 West 10th Street
Juneau, Alaska 99811

Dear Commissioner Holloway:

The Anchorage School District formally requests the current method of reimbursement from the State for Anchorage's district-operated pupil transportation program be reviewed. The Anchorage School District provides pupils with home-to-school transportation, special education transportation, and extracurricular activity transportation. The District's Pupil Transportation Department operates and maintains buses, administers contracts with private companies providing pupil transportation, and provides crossing guard service with the aim of ensuring the District's students are able to safely attend school and school-related activities.

Our request for reconsideration of the reimbursement rate for district-operated transportation services is based on the following factors.

- Inequities still exist in the way statewide reimbursement of pupil transportation expenditures are made.

- Cost for contracted services does not include the cost of the District to administer the contract. The District plans and schedules the routes for the contractor. The District's safety officers also provide services to the contractor. In addition, the District pays for the advertising of routes each fall and for the annual Pupil Transportation audit.

- A comparison of the daily cost per pupil per live mile driven between FY 1990-91 to FY 1994-95 indicates a

significant closing of the gap between district-operated pupil transportation and contracted services when costs are adjusted to more accurately reflect district operational costs to contracted service costs.

- The District has made a good faith effort to reduce operating costs by reducing and freezing salaries for drivers and attendants. Efforts have also been made to increase efficiencies.

Inequities

The current method of reimbursement from the State for our district-operated pupil transportation program is to apply a factor of 66.83% to the District's audited statement of services. The way this factor was derived has never been clear to us, however, the January 31, 1991 legislative audit report of the Department of Education Pupil Transportation Department, states:

> "...DOE has paid ASD only two-thirds of its actual costs of operations. According to the program coordinator this ratio was essentially lifted out of midair by DOE officials. Basing payments of the State's largest pupil transportation recipient on a vague estimate points out the weaknesses of the program's current regulatory structure."
>
> . . .

This same audit highlighted a variety of circumstances where varied approaches adopted by different school districts resulted in an inequitable distribution of pupil transportation funds. For instance, the unequal treatment of hazardous routes was brought forth in the audit. One district with designated hazardous routes transported over 400 pupils living within 1.5 miles from their school but did not reduce their reimbursement request to reflect these transportation costs yet another school district which also transported 400 pupils within 1.5 miles from their school was required to make adjustments for hazardous routes. The Department of Education responded to the legislative audit by stating:

> "Regulations allow for variation in the calculation of reductions of reimbursement for the cost of transporting students who live within 1 1/2 miles of school. "

The auditors replied:

> "In our view, districts have been allowed to stretch this regulatory discretion to the extent that there is unequal treatment of districts."

We conducted a recent telephone survey of various school districts throughout the State of Alaska. It was evident that these regulatory discretions were still continuing.

The Department of Education regulation 4 AAC 27.060 (a) states in part:

> "Subject to the availability of funds, districts will be reimbursed for the cost of all approved regular routes, special education routes, other conveyance routes, and in-lieu-of-agreements."

Further, in paragraph (e), the regulation states:

> "If funds allocated for pupil transportation reimbursement are insufficient to provide full reimbursement under this section, the funds that are available shall be prorated among the districts."

The Anchorage School District's interpretation of this regulation is that the Department of Education is required to reimburse all school districts for the entire cost of pupil transportation services of approved routes, etc. If the amount of appropriation is not adequate to meet the reimbursement needs for all districts' pupil transportation services, the Department of Education must prorate the appropriated costs, both district-operated and contracted statewide. Neither the Department of Education's regulations or state statutes explicitly provides that the Department of Education may

impose a ceiling on reimbursement for district-operated pupil transportation services.

Costs

A comparison is often made between the current daily rate per route for district-operated school buses to current contracted rates for regular and special education buses. This is not a fair comparison since the district-operated daily rate includes many costs which are not comparable to contracted rates. For instance, the costs for crossing guards, advertisement of routes, audits, data processing for scheduling, and administration of contracted services are included in the total cost for district-operated transportation. In addition, the contractors cost is reduced by deducts for hazardous routes and kindergarten routes. These deducts are borne by the District.

The differences in terrain, student concentrations, the existence of deadhead mileage, the mix of regular routes and special education routes, and other similar factors causes the cost of operations to vary greatly within the same school district whether the routes are district-operated or contracted. Therefore, the question arises: Which contracted rate is being compared to the district-operated daily rate per route?

In addition, the reimbursement percentage does not reflect the District's actual costs and appears to have been established without a reasonable correlation to what a contractor might charge to duplicate the District's provided service. The District recognizes that there is a difference in wages and benefits provided to employees under the collective bargaining agreement as compared to the packages offered by private bus contractors. However, wage differentials should be considered with profit margins. From a theoretical point, if the contractor were to forego the related profit margin on a contract, more cash would be available to increase hourly wage rates for contract drivers and attendants. Therefore, wage rates are not the only factor to consider. Time and mileage are also key considerations. It should be noted that recent requests for proposals by other school districts in the state

have resulted in bids from contractors for services beginning in FY 1996-97 that are significantly higher (15%) than their previous contracts. We believe this has resulted from the lack of competition from contractors in the state capable of handling larger contracts.

The attached schedule (attachment A) reflects the adjustments made allocating District staff time and other expenses to district-operated services and contracted services.

Daily Cost Per Pupil Per Live Mile Driven

The difference in costs between the district-operated operations and contracted operations is explained by the different rates of driver and attendant compensation. We predicted in 1991 that much of this difference would disappear over the coming years as the minimum wage requirements of the State become applicable. According to the data compiled in FY 1990-91, the daily cost per pupil per live mile on regular routes ranged from $0.042 to $0.140 for contracted routes and $0.09 for district-operated routes. At that time, only one service area on contract had a higher rate than the District. The FY 1994-95 data (attachment B) indicated the daily cost per pupil per live mile on regular routes increased to the range between $0.051 and $0.128 for contracted and $0.100 for district-operated routes with two service areas on contract that were at a higher rate than the District. Overall, this trend indicates that the rate for the Anchorage School District operated routes increased in daily cost by 2 percent while daily costs for contracted routes increased by as much as 22 percent over this five year period.

Reduction of Costs and Increase in Efficiencies

The Anchorage School District has made a good faith effort to reduce operating costs and increase efficiencies in delivering services.

- Wages for drivers and attendants had been reduced and virtually frozen from 1987 through 1995. The only funds put into the bargaining group between

In contrast, overall District costs, less contracted transportation costs have not increased at the same rate.

Fiscal Year	District Cost Less Contracted	Percent Increase	Daily Avg. # of Student	Percent Increase	# of Routes	Percent Increase
1990-91	$4,774,867		5,784		78	
1991-92	5,082,448	6.4%	5,894	1.9	78	0.0%
1992-93	5,369,991	5.7	6,318	7.2	84	7.7
1993-94	5,244,135	(2.3)	6,527	3.3	82	(2.4)
1994-95	5,133,520	(2.1)	6,380	(2.3)	81	(1.2)
1995-96	5,529,442*	7.7	6,461	1.3	81	0.0

* Budgeted

In addition, the Anchorage School District has made efforts to increase operating efficiencies by purchasing larger capacity buses to replace older buses. The capacity on these larger buses has increased from 65 to 85. Fuel mileage has also increased from 4.5 miles per gallon (gasoline) to 9 miles per gallon by going to diesel operated buses. The capability to increase the capacity on each bus allows more students to be transported with fewer routes.

Comparisons

Even with this differential between wages, the District's wages for bus drivers is significantly lower than the compensation paid by the Municipality of Anchorage for People Mover drivers or for wages required by the State under the Little Davis-Bacon law regarding prevailing wages for drivers on public construction projects.

Summary

In summary, it is our belief that the Anchorage School District's rate of reimbursement should be adjusted to more accurately reflect the costs incurred. Costs for contracted services have increased with the State mandated minimum wage requirement for drivers thereby substantially decreasing the difference between District costs and contracted costs. In addition, the allocation of District costs to the contractor for

CORRECTION

THE FOLLOWING DOCUMENT(S)
HAVE BEEN REFILMED TO
ASSURE LEGIBILITY OR PAGINATION

1990-91 and 1994-95 were bonuses for safety and attendance.

- The overall cost for drivers decreased with the attrition of senior staff.
- New drivers were compensated at a lower rate in a two-tiered wage scale until the most recent contract which went into effect for FY 1995-96.
- There has been low turnover among District employees compared to contractors.
- There is a much higher building principal satisfaction with district-operated buses.
- The District's contribution to the Drivers Pension Trust Fund was reduced by 50% beginning July 1, 1987.

Meanwhile, drivers for contracted services have received increases in their wages due to the minimum wage requirement passed by the State. Commercial drivers licenses were also required by April of 1992. This has impacted our contract that went into effect last year. The differences between the District's operating costs and the cost of contracted services has shrunk considerably since 1986 when the 66.83% reimbursement factor was imposed by the State. Contracted costs have increased 65 percent since FY 1990-91 for an average annual increase of 10.9 percent while District cost (less contracted cost) have increased only 16 percent for an average increase of 2.6 percent per year.

Fiscal Year	Contracted Cost	Percent Increase	Daily Avg. # of Students	Percent Increase	# of Routes	Percent Increase
1990-91	$ 3,859,967		10,042		136	
1991-92	4,392,454	13.8%	10,606	5.6%	158	16.2%
1992-93	4,874,134	11.0	10,815	2.0	155	5.4
1993-94	5,375,475	10.3	11,585	7.1	157	1.3
1994-95	5,758,386	7.1	10,786	(6.9)	158	0.6
1995-96	6,375,000*	10.7	9,909	(8.1)	162	2.5

* Budgeted

In contrast, overall District costs, less contracted transportation costs have not increased at the same rate.

Fiscal Year	District Cost Less Contracted	Percent Increase	Daily Avg. # of Student	Percent Increase	# of Routes	Percent Increase
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Summary

In summary, it is our belief that the Anchorage School District's rate of reimbursement should be adjusted to more accurately reflect the costs incurred. Costs for contracted services have increased with the State mandated minimum wage requirement for drivers thereby substantially decreasing the difference between District costs and contracted costs. In addition, the allocation of District costs to the contractor for

services provided to the contractor makes this cost differential even smaller. The main focus, however, is the existence of some apparent inequities which continue to exist in the statewide system despite the legislative audit recommendations. We remain willing to work with you and your staff to develop appropriate recommendations for regulatory or statutory changes.

We would be glad to answer any questions you may have regarding this request. Please contact Janet Stokesbary, Chief Financial Officer at 269-2301 or Steve Kalmes, Director of Pupil Transportation at 563-3022.

Sincerely,

Bob Christal
Superintendent

BC/JS/BM

Attachment

ANCHORAGE SCHOOL DISTRICT
PUPIL TRANSPORTATION
CALCULATION TO REFLECT THE DAILY RATE PER ROUTE
BASED ON ACTUAL EXPENDITURES FOR FISCAL YEAR ENDING JUNE 30, 1995

	Actual Expenditure	District-Operated	Contracted	Other Expenditures
FY 94-95 Pupil Transportation Expenditures	11,415,082.03	5,656,696.43	5,758,385.60	
Contracted Services-Administrative		470.07	(470.07)	
In-Lieu-of-Transportation		25,499.52	(25,499.52)	
Total Actual FY 94-95 Expenditures* **	11,415,082.03	5,682,666.02	5,732,416.01	0.00
Adjustments:				
Personnel Time Allocation:				
Director	72,198.00	(28,879.20)	28,879.20	
Transportation Planner	41,553.00	(24,931.80)	24,931.80	
Route Scheduler	46,674.00	(28,004.40)	28,004.40	
Transportation Supervisor	46,674.00	(35,005.50)	35,005.50	
Safety Office (2)	61,129.00	(24,451.60)	24,451.60	
Secretary	21,489.00	(2,148.90)	2,148.90	
Senior Clerk	24,695.00	(7,408.50)	7,408.50	
Dispatcher (2)	52,624.20	(5,262.42)	5,262.42	
Vehicle Maintenance Supervisor	65,677.00	(6,567.70)	6,567.70	
Administrative Assistant	35,856.00	0.00	0.00	
Subtotal		(162,660.02)	162,660.02	0.00
Professional Services Allocation:				
Pupil Transportation Audit	3,000.00	(1,200.00)	1,200.00	
Edulog License Fee	13,000.00	(5,200.00)	5,200.00	
Newspaper Advertisement	8,000.00	(3,200.00)	3,200.00	
Subtotal		(9,600.00)	9,600.00	0.00
Other:				
Crossing Guards	87,292.81	(87,292.81)	0.00	87,292.81
Hazardous Routes-District	557,954.19	(278,977.10)		278,977.10
Kindergarten Routes-District	160,541.64	(160,541.64)		160,541.64
Hazardous Routes-Contracted***	742,861.73	0.00	(371,430.87)	371,430.87
Kindergarten Routes-Contracted***	157,687.32	0.00	(157,687.32)	157,687.32
In-Lieu-of-Expenditures**	25,499.52	(25,499.52)	25,499.52	0.00
Rainbow Factory***	624.36	0.00	(624.36)	624.36
2% Administrative Charge*	144,077.32	144,077.32	0.00	(144,077.32)
Subtotal		(408,233.75)	(504,243.03)	912,476.78
Total Adjustments		(580,493.77)	(331,983.01)	912,476.78
Total Adjusted Expenditures	11,415,082.03	5,102,172.25	5,400,433.00	912,476.78

* The District-operated amount and the 2% administrative charge equals $5,801,243.82, the amount reported by the State.

** The total expenditure for Contracted plus In-Lieu-of-Expenditures less Hazardous, Kindergarten, and Rainbow Factory equals $5,228,172.98, the amount reported by the State.

*** Less Hazardous Route and Kindergarten Students Transported.

Mileage Disbursement-Regular
Fiscal Year 1984-85

	TOTAL DAILY						PER ROUTE			
	TOTAL NO. OF ROUTES	AVERAGE NO. OF PUPILS	AVERAGE NO. OF LIVE MILES	TOTAL AMOUNT	DAILY COST PER PUPIL	DAILY COST PER MILE	AVERAGE NO. OF PUPILS	AVERAGE NO. OF LIVE MILES	RATE	DAILY COST PER PUPIL/MILE
SERVICE AREA III REGULAR	21	1,323	452	3,647.64	2.76	8.07	63	22	173.70	0.1281
SERVICE AREA IV REGULAR	27	1,988	672	5,053.44	2.54	7.52	74	25	187.16	0.1021
DISTRICT OPERATED REGULAR	54	4,705	2,051	17,884.72	3.80	8.72	87	38	331.20	0.1001
SERVICE AREA VI REGULAR	24	1,932	611	4,264.78	2.21	6.98	81	25	177.70	0.0867
SERVICE AREA II										
GIRDWOOD	2	97	134	376.54	3.88	2.81	49	67	188.27	0.0579
HIGH SCHOOL	1	23	88	247.28	10.75	2.81	23	88	247.28	0.1222
SERVICE AREA I REGULAR	31	2,232	1,561	5,713.26	2.56	3.66	72	50	184.30	0.0508
	160	12,300	5,569							

Attachment B

Mileage Disbursement-Regular
Fiscal Year 1990-91

	TOTAL DAILY						PER ROUTE			
	TOTAL NO. OF ROUTES	AVERAGE NO. OF PUPILS	AVERAGE NO. OF LIVE MILES	TOTAL AMOUNT	DAILY COST PER PUPIL	DAILY COST PER MILE	AVERAGE NO. OF PUPILS	AVERAGE NO. OF LIVE MILES	RATE	DAILY COST PER PUPIL/MILE
SERVICE AREA II										
GIRDWOOD ELEM.	2	76	62	328.60	4.32	5.30	38	31	164.30	0.1395
HIGH SCHOOL	1	24	82	255.84	10.66	3.12	24	82	255.84	0.1300
DISTRICT OPERATED										
REGULAR	48	3,985	1,910	15,681.10	3.94	8.21	83	40	326.69	0.0989
SERVICE AREA III										
REGULAR	17	954	597	2,567.10	2.69	4.30	56	35	151.01	0.0766
SERVICE AREA VI										
REGULAR	21	1,728	759	3,521.76	2.04	4.64	82	36	167.70	0.0564
SERVICE AREA I										
REGULAR	30	2,524	1,216	4,426.24	1.75	3.64	84	41	147.54	0.0433
SERVICE AREA IV										
REGULAR	24	1,773	1,158	3,555.06	2.01	3.07	74	48	148.13	0.0416
	143	11,064	5,784							

Mileage Disbursement-Special Education
Fiscal Year 1994-95

	TOTAL DAILY						PER ROUTE			
	TOTAL NO. OF ROUTES	AVERAGE NO. OF PUPILS	AVERAGE NO. OF LIVE MILES	TOTAL AMOUNT	DAILY COST PER PUPIL	DAILY COST PER MILE	AVERAGE NO. OF PUPILS	AVERAGE NO. OF LIVE MILES	RATE	DAILY COST PER PUPIL/MILE
SPECIAL AREA II GIRDWOOD*	1	2	98	291.06	145.53	2.97	2	98	291.06	1.4850
DISTRICT OPERATED SPECIAL EDUCATION	27	251	1,068	11,555.76	46.04	10.82	9	40	427.99	1.1639
SERVICE AREA I SPECIAL EDUCATION	12	67	593	2,810.82	41.95	4.74	6	49	234.24	0.8490
SERVICE AREA VI SPECIAL EDUCATION	19	154	706	4,200.70	27.28	5.95	8	37	221.09	0.7341
SERVICE AREA V SPECIAL EDUCATION	20	281	786	4,991.10	17.76	6.35	14	39	249.56	0.4520
	79	755	3251							

* Not reimbursed by the State.

Mileage Disbursement-Special Education
Fiscal Year 1990-91

	TOTAL DAILY						PER ROUTE			
	TOTAL NO. OF ROUTES	AVERAGE NO. OF PUPILS	AVERAGE NO. OF LIVE MILES	TOTAL AMOUNT	DAILY COST PER PUPIL	DAILY COST PER MILE	AVERAGE NO. OF PUPILS	AVERAGE NO. OF LIVE MILES	RATE	DAILY COST PER PUPIL/MILE
SPECIAL AREA VI GIRDWOOD	21	103	485	3,913.95	38.00	8.07	5	23	186.38	1.6453
DISTRICT OPERATED SPECIAL EDUCATION	30	295	1,176	11,383.68	38.59	9.68	10	39	379.46	0.9844
SERVICE AREA I SPECIAL EDUCATION	9	46	564	1,675.08	36.41	2.97	5	63	186.12	0.5811
SERVICE AREA V SPECIAL EDUCATION	15	155	651	3,046.68	19.66	4.68	10	43	203.11	0.4529
SERVICE AREA II SPECIAL EDUCATION	1	6	101	221.19	36.87	2.19	6	101	221.19	0.3650
	76	605	2977							

Revised Attachment A
Date: March 26, 1996

ANCHORAGE SCHOOL DISTRICT
PUPIL TRANSPORTATION
CALCULATION TO REFLECT THE ACTUAL COST OF DISTRICT-OPERATED AND CONTRACTED TRANSPORTATION BASED ON ACTUAL EXPENDITURES FOR FISCAL YEAR ENDING JUNE 30, 1995

	Actual Expenditure	District-Operated	Contracted	Other Expenditures
FY 94-95 Pupil Transportation Expenditures *	11,415,082.03	5,657,166.50	5,757,915.53	
Contracted Services-Administrative In-Lieu-of-Transportation		25,499.52	(25,499.52)	
Total Actual FY 94-95 Expenditures **	11,415,082.03	5,682,666.02	5,732,416.01	0.00
Adjustments:				
Personnel Time Allocation:				
Director	72,198.00	(28,879.20)	28,879.20	
Transportation Planner	41,553.00	(24,931.80)	24,931.80	
Route Scheduler	46,674.00	(28,004.40)	28,004.40	
Transportation Supervisor	46,674.00	(35,005.50)	35,005.50	
Safety Office (2)	61,129.00	(24,451.60)	24,451.60	
Secretary	21,489.00	(2,148.90)	2,148.90	
Senior Clerk	24,695.00	(7,408.50)	7,408.50	
Dispatcher (2)	52,624.20	(5,262.42)	5,262.42	
Vehicle Maintenance Supervisor	63,677.00	(6,567.70)	6,567.70	
Administrative Assistant	35,856.00	0.00	0.00	
Related Fringe Benefits		(23,715.83)	23,715.83	
Subtotal		(166,375.85)	166,375.85	0.00
Professional Services Allocation:				
Pupil Transportation Audit	3,000.00	(1,200.00)	1,200.00	
Edulog License Fee	13,000.00	(5,200.00)	5,200.00	
Newspaper Advertisement	8,000.00	(3,200.00)	3,200.00	
Subtotal		(9,600.00)	9,600.00	0.00
Other				
Activity Trips - District	332,423.92	(332,423.92)		332,423.92
Crossing Guards ***	87,292.81	(87,292.81)		87,292.81
In-Lieu-of-Transportation**	25,499.52	(25,499.52)	25,499.52	0.00
Subtotal		(445,216.25)	25,499.52	419,716.73
Total Adjusted Expenditures for Routes		5,041,473.92	5,953,891.58	419,716.73
Adjustments Per DOE Regulations				
Hazardous Routes-District	557,954.19	(278,977.10)		278,977.10
Crossing Guards ****	87,292.81	43,646.41	0.00	(43,646.41)
Kindergarten Routes-District	160,541.84	(160,541.64)		160,541.66
Hazardous Routes-Contracted**	742,861.73	0.00	(371,430.87)	371,430.87
Kindergarten Routes-Contracted**	157,687.32	0.00	(157,687.32)	157,687.32
Rainbow Factory Trips**	624.36	0.00	(624.36)	624.36
Subtotal		(395,872.33)	(529,742.55)	925,614.88
2% Administrative Charge*	144,077.32	68,380.57	75,696.75	(144,077.32)
Total Adjusted Expenditures for Reimbursement Purposes	11,415,082.03	4,713,982.16	5,499,845.58	1,201,254.29

* The District-operated amount and the 2% administrative charge for both District Operated and Contracted equals $5,801,243.82, audited amount reported to the DOE.

** The total expenditure for Contracted plus In-Lieu-of-Expenditures less Hazardous, Kindergarten, and Rainbow Factory Trips equals $5,228,172.98, the audited amount reported to DOE.

*** To reduce the total expenditures used to calculate rate per mile.

**** To reflect the 50% allowable through Hazardous Routes.

Revised Attachment B
Date: March 26, 1996

Mileage Disbursement-Regular
Fiscal Year 1994-95

	TOTAL DAILY						PER ROUTE			
	TOTAL NO. OF ROUTES	AVERAGE NO. OF PUPILS	AVERAGE NO. OF LIVE MILES	TOTAL AMOUNT	DAILY COST PER PUPIL	DAILY COST PER MILE	AVERAGE NO. OF PUPILS	AVERAGE NO. OF LIVE MILES	[1] [2] RATE	DAILY COST PER PUPIL/MILE
SERVICE AREA III										
REGULAR	21	2,066	470	4,019.40	1.95	8.55	98	22	191.40	0.0869
SERVICE AREA IV										
REGULAR	27	2,577	733	5,559.30	2.16	7.58	95	27	205.90	0.0795
DISTRICT OPERATED										
REGULAR	54	6,129	2,214	17,742.78	2.89	8.01	114	41	328.57	0.0706
SERVICE AREA VI										
REGULAR	24	2,457	659	4,747.92	1.93	7.20	102	27	197.83	0.0704
SERVICE AREA II										
GIRDWOOD	2	111	141	428.98	3.86	3.04	56	71	214.49	0.0548
HIGH SCHOOL	1	23	88	247.11	10.74	2.81	23	88	247.11	0.1221
SERVICE AREA I										
REGULAR	31	3,048	1,654	6,286.49	2.06	3.80	98	53	202.79	0.0387
	160	16,411	5,959							

ASD

[1] No deducts for hazardous and kindergarten pupils.

[2] Contracted rate per route includes the allocated amount from the district operation in the amount $7.25 per route. ($195,975.85 divide by 158 routes, divide by 171 days)

Revised Attachment B
Date: March 26, 1996

Mileage Disbursement-Special Education
Fiscal Year 1994-95

	TOTAL DAILY						PER ROUTE			
	TOTAL NO. OF ROUTES	AVERAGE NO. OF PUPILS	AVERAGE NO. OF LIVE MILES	TOTAL AMOUNT	DAILY COST PER PUPIL	DAILY COST PER MILE	AVERAGE NO. OF PUPILS	AVERAGE NO. OF LIVE MILES	[1] [2] [3] RATE	DAILY COST PER PUPIL/MILE
SPECIAL AREA II GIRDWOOD*	1	2	98	319.13	159.57	3.26	2	98	319.13	1.6282
DISTRICT OPERATED SPECIAL EDUCATION	27	251	1,068	11,739.60	46.77	10.99	9	40	434.80	1.1824
SERVICE AREA I SPECIAL EDUCATION	12	67	593	3,066.96	45.78	5.17	6	49	255.58	0.9263
SERVICE AREA VI SPECIAL EDUCATION	19	154	706	4,590.59	29.81	6.50	8	37	241.61	0.8022
SERVICE AREA V SPECIAL EDUCATION	20	281	786	5,674.20	20.19	7.22	14	39	283.71	0.5138
	79	755	3251							

ASD

* Not reimbursed by the State.

[1] No deducts for hazardous and kindergarten pupils.
[2] Contracted rate route includes the allocated amount from the district-operation in the amount of $7.25 per route. ($195,575.85 divide by 158 routes, divide by 171 days.)
[3] Includes the daily rate for the attendants.

SB

253

No. 1

Bill Version: SB 253

(S) Publish Date: 3-14-96

FISCAL NOTE

STATE OF ALASKA
1996 LEGISLATIVE SESSION

Revision Date:

Department: Commerce and Economic Development

Title: Insurance for Prostate Cancor Testing

BRU: Insurance

Component: Operations

Sponsor: Senator Duncan

Requestor: Labor & Commerce Committee

COMPONENT SERIAL NO. #354

Expenditures/Revenues (Thousands of Dollars)

OPERATING EXPENDITURES	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0
CAPITAL EXPENDITURES						
CHANGE IN REVENUES						

FUND SOURCE (Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 General Fund						
1005 GF/Program Receipts						
1006 GF/MHTIA						
Other						
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY 96) cost: $ 0.0

POSITIONS

FULL-TIME	0	0	0	0	0	0
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)
No fiscal impact.

Prepared by: Joan Brown, Administrative Officer Phone: 465-2597

Division: Insurance Date: 2/9/96

Approved by Commissioner: William L. Hensley Date: 2-13-96

Agency: Commerce and Economic Development

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ZERO FISCAL - COMM. & ECON. DEV. - INSURANCE - OPERATIONS

FISCAL NOTE

No. 5

STATE OF ALASKA
1996 LEGISLATIVE SESSION

Version: CS SB 253(FIN)
(S) Publish Date: 4-3-96

Revision Date:
Title: An Act relating to insurance coverage for costs of prostate cancer detection.
Sponsor: Duncan
Requestor: (S) FIN

Department Affected: All Agencies
BRU: All Agencies
Component: All Agencies
COMPONENT SERIAL NO. 64

Expenditures/Revenues: (Thousands of Dollars)

OPERATING EXPENDITURES	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02
PERSONAL SERVICES	0.0	0.0	0.0	0.0	0.0	0.0
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0
CAPITAL EXPENDITURES	0.0	0.0	0.0	0.0	0.0	0.0
CHANGE IN REVENUES ( )	0.0	0.0	0.0	0.0	0.0	0.0

FUND SOURCE: (Thousands of Dollars)

1002 Federal Receipts	0.0	0.0	0.	0.0	0.0	0.0
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1037 GF/Mental Health						
OTHER						
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY 96) cost: $ zero

POSITIONS:

FULL-TIME	0	0	0	0	0	0
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary.)

Currently the State's plan pays for the Prostate Specific Antigen (PSA) test only when there are clinical signs or symptoms of prostate disease. This bill would expand health coverage to include routine prostate cancer screening. The State's health insurance premiums are based on the experience of the plan. We anticipate an increase in health costs of approximately $60,000 per year.

This bill also mandates the coverage of PAP tests. These tests are already covered under the State's plan; therefore, there will be no increased cost for that coverage.

Prepared by: Robert F. Stalnaker R. F. Stalnaker Phone: 465-4470
Division: Retirement & Benefits Date:

Approved by Commissioner: Mark Boyer MBoyer
Agency: Department of Administration Date: 4/2/96

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Rev: 11/95

ZERO FISCAL NOTE - ALL AGENCIES

HOUSE COMMITTEE REPORT

(7)

Date Referred to Committee: April 15, 1996 FURTHER REFERRALS: Labor and Commerce
State Affairs

Date of Committee Action: 4/25/96

The HEALTH, EDUCATION AND SOCIAL SERVICES Committee considered: CSSB 253(FIN)

CS FOR SENATE BILL NO. 253(FIN) INS.FOR PROSTATE & CERVICAL CANCER TESTS

"An Act relating to insurance coverage for costs of prostate cancer or cervical cancer detection."

recommends it be replaced with the following committee substitute HCS CS SB 253(HES) [X] the same title [ ] a new title

[ ] additional referral to _____ Committee
[ ] attached amendment(s)

ADOPTS: _____ Letter of Intent

ATTACHES NEW FISCAL NOTE(s): (Dept) APPROVES PREVIOUS: (Dept/Date)

[ ] fiscal note(s) _____ [ ] fiscal note(s) _____

[ ] zero fiscal note(s) _____ [X] zero fiscal note(s) CED/3-14-96 (2)
All Agencies/4-3-96

SIGNING WITH RECOMMENDATIONS	DP	DNP	NR	AM
			✓	
	✓	✓		
	✓			
			✓	✓
				✓

CHAIR'S SIGNATURE _____

HOUSE CS FOR CS FOR SENATE BILL NO. 253(HES)

IN THE LEGISLATURE OF THE STATE OF ALASKA

NINETEENTH LEGISLATURE - SECOND SESSION

BY THE HOUSE HEALTH, EDUCATION AND SOCIAL SERVICES COMMITTEE

Offered:
Referred:

Sponsor(s): SENATORS DUNCAN. Ellis, Salo, Zharoff, Lincoln, Kelly

REPRESENTATIVES Robinson, Kubina, Navarre

A BILL

FOR AN ACT ENTITLED

"An Act relating to insurance coverage for costs of prostate cancer or cervical cancer detection."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* **Section 1.** AS 21.42 is amended by adding a new section to read:

Sec. 21.42.395. COVERAGE FOR PROSTATE AND CERVICAL CANCER DETECTION. (a) An insurer authorized under AS 21.09 to offer, issue for delivery, deliver, or renew an individual or group disability insurance policy for medical coverage on an expense incurred basis in the state, a hospital or medical service corporation authorized under AS 21.87 to offer or renew a subscriber's contract for medical coverage in the state, or a health maintenance organization authorized under AS 21.86 to offer an enrollee contract to provide health care services on a prepaid basis shall offer coverage for the costs of prostate cancer screening tests as required under the schedule described under (b) of this section, and shall offer coverage for the costs of cervical cancer screening tests as required under (c) of this section. The

coverage required to be offered by this section is subject to standard policy provisions applicable to other benefits including deductible or copayment provisions. If a physician recommends that an insured, subscriber, or enrollee undergo prostate cancer screening by taking a prostate antigen blood test, coverage may not be denied because the insured, subscriber, or enrollee has already had a digital rectal exam and the exam results were negative.

(b) The minimum coverage required to be offered under (a) of this section includes an annual prostate cancer screening test for a person who is

(1) at least 40 years of age but less than 50 years of age and the person is in a high risk group; in this paragraph, "high risk" means a person who is an African-American or who has a family history of prostate cancer; or

(2) 50 or more years of age.

(c) The minimum coverage required to be offered under (a) of this section for cervical cancer screening is an annual pap smear cancer screening test for a person who is 18 or more years of age.

(d) This section does not apply to a supplemental insurance contract covering a specified disease or offering limited benefits.

(e) In this section, "prostate cancer screening tests" includes a prostate antigen blood test or another test that is equivalent or better in cancer detection.

* Sec. 2. This Act applies to a policy of insurance entered into or renewed on or after the effective date of this Act.

SENATOR JIM DUNCAN

ALASKA STATE LEGISLATURE

Alaska State Senate

State Capitol • Room 119 • Juneau, Alaska 99801-1182 • (907) 465-4766 • Fax 465-4748

Memorandum

Date: April 16, 1996

To: Representative Con Bunde, Co-Chair
Representative Cynthia Toohey, Co-Chair
House Health, Education & Social Services Committee

From: Senator Jim Duncan

Subject: SB 253, An Act relating to insurance coverage for costs of prostate cancer or cervical cancer detection.

I request that you schedule SB 253, relating to insurance coverage for costs of prostate cancer or cervical cancer detection, for a hearing in the House Health, Education & Social Services Committee as soon as possible.

Prostate cancer is a serious health concern to men over the age of fifty. Prostate Specific Antigen (PSA) blood tests can be done to detect the presence of cancer and alert men of potential health problems. Currently, insurance companies are not required by Alaska law to include this test in their coverage package. SB 253 will require that insurance companies cover the PSA on annual physical exams when appropriate.

The importance of screening for malignant cancer is well documented. Prostate cancer accounts for 36% of all male cancers and is the second leading cause of death in men after lung cancer as reported by the National Cancer Institute. Although often presumed to develop slowly, nearly two thirds of new cancer cases have spread beyond the prostate gland by the time of diagnosis.

In addition to coverage of the PSA, SB 253 would require coverage of cervical cancer screening. Early detection of cervical cancer involves the Pap Smear, a test that takes a small sample of cervical cells. The American Cancer Society recommends that all women who are sexually active or over the age

REQUEST FOR HEARING

of eighteen should have a Pap test each year. About 90% of cervical cancer cases can be detected early through the use of Pap smears. If discovered early, cervical cancer is almost 100% curable.

SB 253 makes health issues a priority. I would welcome your support in requiring that insurance companies cover the cost of prostate and cervical cancer screening and request that you schedule this bill for a hearing in the House Health, Education & Social Services Committee as soon as possible.

Attachments

Wall Street Journal
Oct. 18, 1995 p. B6

New Cancer Test For the Prostate Appears Promising

By Ron Winslow
Staff Reporter of The Wall Street Journal

Medical researchers said a new version of a widely used screening test for prostate cancer appears to improve its accuracy in detecting the disease.

If the results are borne out in further studies, the test may yield fewer false positive readings for cancer and thus reduce by 31% to 76% the number of men who undergo unnecessary biopsies and other examinations to confirm whether they have cancer.

Use of the current test, known as PSA, for prostate-specific antigen, has increased among men over 50. But it also has provoked controversy in part because only one in three men who have positive readings turns out to have cancer. That means the tests cause two out of three to undergo unnecessary and sometimes painful biopsies and other tests.

The high rate of false positive results occurs because PSA is also elevated in older men with a common noncancerous condition called benign prostatic hyperplasia.

The new test measures two forms of PSA, one that binds to certain blood proteins and another that is free-floating in the blood stream. For reasons not understood, men with prostate cancer have significantly lower levels of free PSA than men with BPH, said William J. Catalona, chief of urologic surgery at Washington University School of Medicine, St. Louis, and lead author of the study. As a result, the study indicated, the new test can better distinguish between men with prostate cancer and those with BPH.

In the study, published in today's Journal of the American Medical Association, researchers used frozen blood samples taken from 113 men over 50 whose original readings were between four and 10. Among those, who had also undergone biopsies and rectal exams, 63 had been diagnosed with BPH and 50 had prostate cancer.

In general, researchers found that men whose free-floating PSA was significantly below 20% of their total PSA levels were more likely to have cancer than those with free PSA levels above 20%.

The study found that the free PSA test would have eliminated 76% of unnecessary biopsies among men who didn't have BPH and 38% of the biopsies among those with the benign condition. In a third group, who had BPH and no cancerous symptoms when doctors felt the prostate during a rectal exam, the free PSA test would have eliminated 31% of unnecessary biopsies.

Dr. Catalona said a new national trial to involve 12,000 patients at eight medical centers around the U.S. has been launched in an effort to verify the results.

— included in this packet of articles
see JAMA. Oct. 18.

BACKGROUND - PROSTATE CANCER

Evaluation of Percentage of Free Serum Prostate-Specific Antigen to Improve Specificity of Prostate Cancer Screening

William J. Catalona, MD; Deborah S. Smith, PhD; Robert L. Wolfert, PhD; Tang J. Wang, PhD; Harry G. Rittenhouse, PhD; Timothy L. Ratliff, PhD; Robert B. Nadler, MD

Objective.—To evaluate measurement of percentage of free prostate-specific antigen (PSA) in serum to improve the specificity of prostate cancer screening in men with serum PSA levels between 4.1 and 10.0 ng/mL.

Design.—Retrospective, nonrandomized analysis using a research assay for measuring free PSA in frozen serum from men with a spectrum of prostate sizes and digital rectal examination results.

Setting.—General community outpatient prostate cancer screening program at a university center.

Patients.— One hundred thirteen men aged 50 years or older, 99% of whom were white, with serum PSA concentrations of 4.1 to 10.0 ng/mL, including 63 men with histologically confirmed benign prostatic hyperplasia, 30 with prostate cancer with an enlarged gland, and 20 with cancer with a normal-sized gland. All study volunteers had undergone prostatic ultrasonography and biopsy.

Main Outcome Measures.—Percentage of free PSA in serum and percentage of free PSA cutoff that maintained at least 90% sensitivity for prostate cancer detection.

Results.—Median percentage of free PSA was 9.2% in men with cancer and a normal-sized gland, 15.9% in men with cancer and an enlarged gland, and 18.8% in men with benign prostatic hyperplasia ($P<.001$). The percentage of free PSA cutoff was higher in men with an enlarged gland and in those with a palpably benign gland. In men with an enlarged, palpably benign gland, a free PSA cutoff of 23.4% or lower detected at least 90% of cancers and would have eliminated 31.3% of negative biopsies.

Conclusions.—Measurement of percentage of free serum PSA improves specificity of prostate cancer screening in selected men with elevated total serum PSA levels and can reduce unnecessary prostate biopsies with minimal effects on the cancer detection rate; however, further studies are needed to define optimal cutoffs. Final evaluation of PSA screening also must consider the ability of current treatments to improve the prognosis of screen-detected prostate cancer.

(*JAMA*. 1995;274:1214-1220)

From the Division of Urologic Surgery, Department of Surgery, Washington University School of Medicine, St Louis, Mo (Drs Catalona, Smith, Ratliff, and Nadler), and Department of Research and Development, Hybritech Incorporated, San Diego, Calif (Drs Wolfert, Wang, and Rittenhouse).

Reprint requests to Division of Urologic Surgery, 4960 Children's Pl, St Louis, MO 63110 (Dr Catalona).

MEASUREMENT of serum prostate-specific antigen (PSA) concentrations is widely used as an aid in the early detection of prostate cancer.[1] Although concern has been expressed that screening with PSA may detect insignificant cancers, this has not been borne out. The large majority of cancers detected have the pathological features of progressive cancers.[1-5] Recent studies using frozen serum samples from more than a decade ago have shown that men who developed prostate cancer 5 to 10 years after their serum was drawn could have been identified with high accuracy based on their initial serum PSA levels.[6,7]

In screening studies, most men with elevated serum PSA concentrations have PSA levels in the 4.1 to 10.0 ng/mL range, and many have enlarged, palpably benign prostate glands on digital rectal examination. Overall, only one quarter of these men have cancer detected by an initial prostatic needle biopsy.[1,2] However, rebiopsy of these patients within 6 to 12 months shows that the initial biopsy missed cancers and that closer to one third of patients in this group actually had prostate cancer.[8] Most prostate cancer patients with slightly elevated PSA concentrations have early-stage disease, whereas more than half of patients with PSA concentrations higher than 10.0 ng/mL have advanced disease.[1,2] Thus, the detection of prostate cancer in its curable stages requires the use of relatively low PSA cutoffs (4.0 ng/mL) for screening. Unfortunately, the use of low PSA cutoffs produces high false-positive rates, leading to unnecessary biopsies (ie, negative for cancer). The most common causes of false-positive PSA elevations are benign prostatic hyperplasia and prostatitis.[9] One potential way of reducing false-positive results is measurement of the free and bound forms of PSA in serum.[10-13]

rostate-specific antigen in serum is nd predominantly to the protease bitors α_1-antichymotrypsin (PSA-T) and α_2-macroglobulin (PSA-AMG); im PSA also binds in trace amounts α_1-antitrypsin and inter-alpha trypinhibitor.[10-12] Most complexed PSA sured in commercial immunoassays SA-ACT. Virtually all of the remainmeasurable PSA in serum is in the form. Failure to detect PSA-AMG ue to the concealment of the relevant genic epitopes.[11-13]

Experimental immunoassays have n developed for separate measureit of free PSA and PSA-ACT. Preinary evidence in heterogeneous ent populations suggests that (for nown reasons) the proportion of free A is lower with prostate cancer than n benign prostatic hyperplasia, and t measurements of PSA forms could p distinguish between hyperplasia cancer.[6,11-13]

n the current study, we examined usefulness of free PSA measurents in men with serum PSA concenations of 4.1 to 10.0 ng/mL. We also aluated the free PSA cutoffs needed maintain at least 90% sensitivity in ecting cancer in subsets of men with ferent ultrasonographically measured state sizes and findings on digital tal examination.

ETHODS

bjects and Procedures

From July 1989 through March 1995, measured total serum PSA levels in 249 ambulatory men aged 50 years or er (range, 50 to 90 years; mean [±SD] e, 62.7 [±6.9] years).[2,14] These men sponded to a press release asking althy men to participate in a study of A measurement as a screening test prostate cancer. None had a history prostate cancer, and those with a history of prostatitis were excluded. Men th symptoms of benign prostatic hyrplasia were not excluded. We did not rform a digital rectal examination at e time of the blood test.

We have previously described the dy protocol, which was approved by e Human Studies Committee of Washton University.[2,14] We obtained inrmed consent from all study subjects. men whose initial serum PSA levels re 4.0 ng/mL or lower, no further aluation was performed. Rather, their SA levels were measured again at month intervals for the duration of e study unless the PSA level increased higher than 4.0 ng/mL. If the value s higher than 4.0 ng/mL, another blood mple was collected within 1 to 2 weeks verify the elevation. Men who had two serum PSA concentrations higher than 4.0 ng/mL within the 1- to 2-week period underwent both digital rectal examination and prostatic ultrasonography. If either or both of these procedures revealed abnormal or suspicious findings, we performed a needle biopsy of the prostate under ultrasound guidance. If the PSA concentration was higher than 4.0 ng/mL but the rectal and ultrasound examinations yielded normal findings, no biopsy was performed. Men whose biopsy specimens did not show cancer had serum PSA measurements at 6-month intervals. Repeated rectal examination, ultrasonography, and biopsy, if indicated, were recommended for men whose PSA levels were again higher than 4.0 ng/mL at a later evaluation. Fewer than 1% of the screening volunteers were African American, Asian, or Hispanic.

We measured serum PSA concentrations using an immunoenzymetric assay (Tandem-E PSA, Hybritech Inc, San Diego, Calif). We used the normal range recommended by the manufacturer (0 to 4.0 ng/mL) and considered PSA values higher than 4.0 ng/mL grounds for suspecting prostate cancer. The performance characteristics of the assay have been reported.[1,2,14]

The following data were recorded: (1) findings on digital rectal examination, which were categorized as normal, abnormal but benign (including enlargement), or suspicious for cancer (including induration, asymmetry, and irregularity); (2) ultrasound findings, categorized as normal, abnormal but benign (including enlargement, asymmetry, calculi, and transition-zone hypoechoic areas), or suspicious for cancer (hypoechoic area in the posterior peripheral zone); (3) PSA level in serum drawn before each rectal examination, ultrasonographic examination, or biopsy; (4) results of biopsy; (5) clinical and pathological tumor stage; and (6) tumor grade.

Monoclonal Antibody Immunoassay Specific for Free PSA.—A sandwich immunoassay was developed using a monoclonal antibody highly specific to free PSA and a second monoclonal antibody recognizing free and bound PSA equally. In this format, less than 0.7% cross-reactivity to PSA-ACT was demonstrated.

The solid-phase capture antibody was incubated with 200 mL of sample for 2 hours at room temperature, washed, and then incubated for an additional 2 hours with the second monoclonal antibody conjugated to alkaline phosphatase. Beads were washed, incubated for 1 hour with the chemiluminescent substrate 4-methoxy-4-(3-phosphatephenyl)spiro [1,2-dioxetane-3,2'-adamantane] disodium salt (LumiPhos 480, Lumigen, Inc, Southfield, Mich), and read in a luminometer (MGM Instruments, Inc, Hamden, Conn). The free PSA calibrators, with the range of 0 to 10.0 ng/mL, were value assigned by the Tandem-R PSA assay to obtain mass-weight values. The analytical detection limit of the free PSA immunoassay was 0.05 ng/mL. The intraassay coefficient of variation was between 2.5% and 12.5% across the calibrator range. The interassay coefficient of variation was 6.3% at 0.77 ng/mL concentration and 4.8% at 3.98 ng/mL concentration.

Measurement of Free PSA in Selected Subgroups.—Serum samples had been routinely frozen at −80°C and stored for all study volunteers enrolled from July 1989 through January 1991. We systematically selected a sample of study volunteers for whom frozen stored serum samples were available for measurement of free and total PSA concentrations. Because men with borderline PSA elevations (4.1 to 10.0 ng/mL) frequently pose a diagnostic dilemma, we first identified all men enrolled before January 1991 whose initial PSA screening measurements were in this range. Since the purpose of our study was to determine the percentage of free PSA in men with a spectrum of ultrasonographically measured prostate sizes with or without detectable prostate cancer, this sample was further subdivided according to estimated prostate volume and biopsy results. Prostate volume was calculated via the prolate spheroid formula[15] using the transrectal ultrasound scan from the first biopsy.

Using these additional parameters, we identified the following study groups: (1) 67 men with biopsy-verified benign prostatic hyperplasia as determined by three or more sets of prostatic biopsy specimens (four to six biopsy cores in each set) that were negative for prostate cancer (ultrasonographically estimated gland volume of ≥40 cm^3); (2) 33 men with biopsy-verified prostate cancer and an enlarged prostate gland (ie, ultrasonographically estimated gland volume of ≥40 cm^3) with prostate cancer detected within 24 months of the initial screening visit (to include the cancers that were missed on the initial biopsies); and (3) 21 men with prostate cancer and a relatively normal-sized gland (ie, ultrasonographically estimated gland volume <40 cm^3) with prostate cancer detected within 24 months of the initial screening visit. In total, frozen serum samples from 121 men were selected for further study. All of the men with prostate cancer had clinically localized cancer, and all but one were treated with radical prostatectomy.

Using the Hybritech research assay

specific for free PSA and the Tandem-E PSA assay for measurement of total PSA, we measured free PSA and reassessed total PSA in the stored serum samples from the initial screening visit in the three study groups.

Since other researchers[6] have reported loss of detectable PSA immunoreactivity following long-term storage of serum samples, we evaluated the stability of total serum PSA as measured in fresh and frozen stored serum samples. The mean coefficient of variation (±SD) for total serum PSA concentration in all fresh and stored pairs was 9.2% (±16.6%). Overall, total PSA as measured in stored serum decreased in 82.6% (100 of 121) of the samples and increased in the remainder. The mean ratio (±SD) of stored to fresh total PSA (ie, [total PSA measured in stored serum]/[total PSA measured in fresh serum]) was 0.88 (±0.14) for the 100 cases in which the total PSA decreased and 1.05 (±0.06) for the 21 cases in which the total PSA increased when reassessed in stored serum. For the cases in which PSA decreased, outliers that fell below 1 SD of the mean ratio of stored to fresh total PSA (ie, the stored total PSA was <74% of total PSA as measured in fresh serum) were eliminated from further analyses (n=5). Similarly, for cases in which total PSA increased, outliers that increased more than 1 SD above the mean ratio of stored to fresh total PSA (ie, the stored total PSA was >111% of fresh total PSA) also were eliminated (n=3). Overall, 6.6% of cases were eliminated from further analysis (final n=113); elimination of cases was uniform across the three study groups described above (generalized Fisher's exact test,[16] $P=.80$).

Pathological Tumor Staging.—Pathological staging was performed as previously described.[3] For this analysis, study volunteers whose cancer was confined to the prostate and had clear margins were categorized as having pathologically organ-confined cancer (stage pT1 or pT2). Those with microscopic periprostatic cancer extension and those whose resected prostate gland contained cancer at the margins (stage pT3a), those with cancer invading into the seminal vesicles (stage pT3b), and those with lymph node metastases (stage N1) were classified as having pathologically advanced cancer.

Tumor Grading.—Gleason score was recorded for the radical prostatectomy specimens (49 [98%] of 50 of the included cancer cases were treated with radical prostatectomy). In three cases (6%), the pathologist recorded only the tumor grade (ie, well, moderately, or poorly differentiated). To estimate Gleason score for these cases, we graded the remainder of the tumors as well (Gleason score of 2 to 4), moderately (Gleason score of 5 to 7), or poorly (Gleason score of 8 to 10) differentiated and calculated the median Gleason score for each grade. This value was substituted for Gleason grade when Gleason score was not recorded.

Statistical Analysis

We calculated one-way analysis of variance, Mann-Whitney *U* tests, and χ^2 tests to assess differences in the study groups with regard to clinical characteristics (ie, age at first screening visit, proportion with digital rectal examination results suspicious for prostate cancer at the most recent biopsy, and estimated prostate volume at first biopsy).

Since previous studies have suggested that the percentage of free PSA (vs the absolute free PSA value) best discriminates between prostate cancer and benign hyperplasia,[13] we calculated the percentage of free PSA as the ratio of free PSA to total PSA multiplied by 100. The total PSA concentration was that measured in the repeated assay performed on the stored serum samples. We compared total PSA and the percentage of free PSA across the three study groups via a Kruskal-Wallis test. We used Mann-Whitney *U* tests for post hoc pairwise comparisons. To reduce the likelihood of type I error, the significance level for the post hoc comparisons was corrected for the number of comparisons (ie, Bonferroni correction = α divided by the number of comparisons).[17] Therefore, we considered a *P* value ≤.02 (.05/3) significant for all post hoc pairwise comparisons.

Combining the two study groups of men with cancer, we used hierarchical logistic regression analysis to assess the importance of percentage of free PSA in predicting prostate cancer while controlling for age at first screening visit, presence of suspicious findings on rectal examination, and total serum PSA concentration (estimated prostate volume was not included in this model since by design our study groups differed in prostate volume). We report the Wald statistic and the adjusted odds ratio (OR) with 95% confidence interval (CI) for the percentage of free PSA.[18]

To determine whether the percentage of free PSA remained a significant predictor of prostate cancer in the subset of men with an enlarged prostate gland (ie, ultrasonographically estimated gland volume of ≥40 cm^3), we computed a second logistic model excluding the study group of men with prostate cancer and a relatively normal-sized gland. Similar to the first logistic model, the significance of the percentage of free PSA in predicting prostate cancer was assessed after controlling for age at first screening visit, presence of suspicious findings on rectal examination, and total serum PSA concentration. Since the estimated prostate volume differed between those with and without prostate cancer, estimated volume was included as an additional predictor.

Before we calculated the logistic models, the assumption of a linear relationship with presence of prostate cancer was confirmed for each continuously scaled predictor. We determined quartiles for the distribution of each predictor (ie, age, total serum PSA concentration, estimated prostate volume, and percentage of free PSA) and calculated the ORs for the prediction of cancer based on the comparison of each quartile to the lowest quartile. We then plotted the log of the OR against the midpoint of each quartile to assess the shape of the relationship.[18] Visual inspection indicated that none of the continuously scaled predictors were associated with the presence of prostate cancer in a markedly nonlinear manner. Consequently, we modeled these predictors as simple linear effects in the logistic models.

To assess whether using the percentage of free PSA as a screening test for prostate cancer would increase the specificity of PSA-based screening, we preset sensitivity to at least 90% and determined the cutoffs for percentage of free PSA for the combined study groups of men with prostate cancer, for the study group with cancer and a gland 40 cm^3 or larger, and for the study group with cancer and a gland smaller than 40 cm^3 (here "sensitivity" is used in the context of specific subgroups and not the general screening population; that is, we do not include the full range of normal and elevated serum PSA concentrations). We then computed specificity (ie, the proportion of men without prostate cancer who would have been considered to have a negative screening test) using each percentage of free PSA cutoff. We repeated this analysis in the subsample of men without findings suspicious for prostate cancer on digital rectal examination (all had serum PSA concentrations between 4.1 and 10.0 ng/mL initially).

Finally, we calculated a point biserial *r* to assess the relationship between the presence of pathologically advanced cancer and the percentage of free PSA. A Pearson correlation coefficient was calculated to assess the relationship between Gleason score and the percentage of free PSA.

RESULTS

Comparison of Clinical Characteristics Across Study Groups

Table 1 summarizes the clinical characteristics (ie, age at first screening visit,

Table 1.—Clinical Characteristics of Study Groups

Characteristic	Benign Prostatic Hyperplasia (n=63)	Cancer With Gland ≥40 cm³ (n=30)	Cancer With Gland <40 cm³ (n=20)	P*
Age in years, mean (±SD)	66.3 (±5.6)	68.5 (±6.5)	66.2 (±4.3)	.20
Rectal examination findings suspicious for prostate cancer, No. (%)†	14/62 (22.6)	14/30 (46.7)	10/20 (50.0)	.02
Median (±SIR‡) prostate volume	60.8 (±11.0)	49.5 (±7.2)	30.1 (±3.9)	.005

*P values for age and digital rectal examination results represent three-way comparisons via one-way analysis of variance and χ^2, respectively. The P value for prostate volume represents a Mann-Whitney U test comparing men with benign prostatic hyperplasia and men with prostate cancer with an enlarged gland (≥40 cm³).
†Findings from digital rectal examination were unavailable for one study volunteer.
‡SIR indicates semi-interquartile range ([75th percentile − 25th percentile]/2).

Table 2.—Median Total Serum PSA Concentration and Percentage of Free Serum PSA Concentration for Study Groups*

Concentration	Benign Prostatic Hyperplasia (n=63)	Cancer With Gland ≥40 cm³ (n=30)	Cancer With Gland <40 cm³ (n=20)	P†
Median (±SIR) total PSA	6.0 (±1.4)	6.6 (±1.5)	5.3 (±1.3)	.60
Median (±SIR) % free PSA	18.8 (±6.8)	15.9 (±3.9)	9.2 (±3.3)	<.001

*PSA indicates prostate-specific antigen; and SIR, semi-interquartile range ([75th percentile − 25th percentile]/2).
†P values represent three-way comparisons via Kruskal-Wallis tests. For the percentage of free PSA, all Mann-Whitney U pairwise comparisons between groups were significant at P< .002.

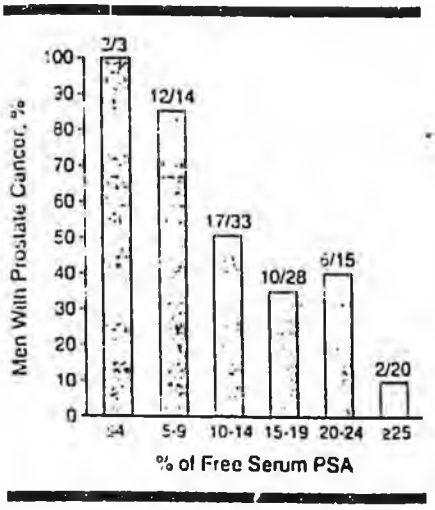


Figure 1.—Decreasing simple proportion of men in the combined study groups found to have prostate cancer on biopsy with each 5% increase in the percentage of free prostate-specific antigen (PSA) in serum (ratio of free PSA to total PSA multiplied by 100).

digital rectal examination results at the time of the most recent biopsy, and estimated prostate volume at first biopsy) for the three study groups. The study groups did not differ with regard to mean age (P=.20). As expected, men with prostate cancer were significantly more likely to have digital rectal examination findings suspicious for prostate cancer (χ^2[2]=8.0; P=.02). As defined by our selection criteria, the study groups also differed significantly with regard to estimated prostate volume. A pairwise comparison indicated that the men with benign prostatic hyperplasia had significantly larger prostate glands than the men with prostate cancer and an enlarged prostate gland (Mann-Whitney U P=.005).

Distribution of Total PSA and the Percentage of Free PSA in Stored Samples

As shown in Table 2, total PSA as measured in stored samples did not differ across study groups (Kruskal-Wallis P=.60). In contrast, the percentage of free PSA differed significantly across groups (Kruskal-Wallis P<.001). Men with prostate cancer (with a normal-sized or an enlarged prostate) had a significantly lower percentage of free PSA than men with benign prostatic hyperplasia only (all Mann-Whitney U P values <.002). Additionally, men with prostate cancer and a normal-sized prostate had a significantly lower percentage of free PSA than men with prostate cancer and an enlarged prostate (P=.002).

Use of Percentage of Free PSA for Differentiating Benign Prostatic Hyperplasia From Prostate Cancer

The results of the logistic regression model including both study groups of men with prostate cancer (113 men) indicated that the percentage of free PSA added significantly to the prediction of cancer in men with elevated PSA levels, even after controlling for age, suspicious findings on rectal examination, and total serum PSA (Wald χ^2[1]=19.3; P<.001; adjusted OR, 0.4 [95% CI, 0.3 to 0.6] for each 5% increase in the percentage of free PSA).

Similar results were found for the logistic model that included only the 93 men with an enlarged prostate gland. Measurement of the percentage of free PSA added significantly to the prediction of prostate cancer, even after controlling for age, findings suspicious for cancer on rectal examination, total serum PSA, and estimated prostate volume (Wald χ^2[1]=4.6; P=.03; adjusted OR, 0.6 [95% CI, 0.4 to 0.9] for each 5% increase in the percentage of free PSA).

These results indicate that measurement of the percentage of free PSA gives predictive information about the presence or absence of prostate cancer above that provided by other clinical indexes such as age, total PSA level, suspicious results on rectal examination, and prostate size. Figure 1 illustrates for our combined study groups the systematic decrease in the simple proportion of men with prostate cancer with each 5% increase in the percentage of free PSA.

Percentage of Free PSA as a Screening Test for Prostate Cancer

To determine whether assessment of percentage of free PSA could increase the specificity of PSA-based prostate cancer screening in men with serum PSA levels of 4.1 to 10.0 ng/mL, we calculated percentage of free PSA cutoff points that would predict cancer with at least 90% sensitivity. As shown in Table 3, we calculated a percentage of free PSA cutoff point combining both study groups of men with prostate cancer. Cutoff points for percentage of free PSA also were calculated separately for each study group. As expected, the percentage of free PSA cutoff point was lower in the men with prostate cancer and a normal-sized gland.

Setting sensitivity to at least 90% would have resulted in five missed cancers in the combined cancer study groups. All five men had clinically localized cancer and underwent radical prostatectomy; two were pathologically upstaged to grade pT3. Two of the men had well-differentiated tumors and three had moderately differentiated tumors.

The proportion of men in the benign prostatic hyperplasia study group that would exceed the percentage of free PSA cutoffs and therefore would be considered "true negatives" also is presented in Table 3. Using a free PSA cutoff of 20.3% or lower (which would result in 90% sensitivity if both prostate cancer study groups were combined) would have resulted in negative screens in 33.1% of the benign prostatic hyperplasia group. Consequently, if this cutoff had been used as a criterion for prostatic biopsy, 33.1% of the men with benign prostatic hyperplasia would have been spared biopsy (see Figure 2, patients with benign prostatic hyperplasia above the cutoff line).

Since current standard medical practice mandates the performance of prostatic biopsies in men with rectal examination findings suspicious for prostate cancer, we determined the percentage of free PSA cutoffs (and resultant specificity) for prediction of cancer in men with nonsus-

Table 3.—Percentage of Free PSA Cutoff Points and Resultant Specificity for Predicting Cancer With at Least 90% Sensitivity*

Variable	No. With Cancer	No. Without Cancer	% Free PSA Cutoff	Specificity (95% CI)
In All the Men				
All cancers	50	63	≤20.3	38.1 (25.4-50.8)
Cancer with gland ≥40 cm³	30	63	≤20.5	38.1 (25.4-50.8)
Cancer with gland <40 cm³	20	63	≤13.7	76.2 (64.8-87.6)
In Men With Nonsuspicious Findings on Digital Rectal Examination				
All cancers	26	48	≤23.4	31.3 (17.2-45.4)
Cancer with gland ≥40 cm³	16	48	≤23.4	31.3 (17.2-45.4)
Cancer with gland <40 cm³	10	48	≤13.8	79.2 (66.8-91.6)

*PSA indicates prostate-specific antigen; and CI, confidence interval.
†Proportion of biopsies with findings negative for prostate cancer that could be eliminated using the percentage of free PSA cutoff as a criterion for performing the biopsy.

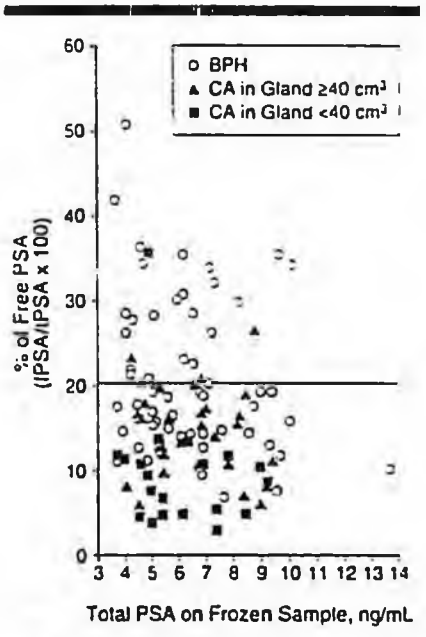


Figure 2.—Percentage of free prostate-specific antigen (PSA) and total PSA (IPSA) concentration in frozen serum from men with benign prostatic hyperplasia (BPH) and men with prostate cancer (CA), regardless of findings of rectal examination. Cutoff point of 20.3% for greater than 90% sensitivity eliminates 38.1% of biopsies in BPH group.

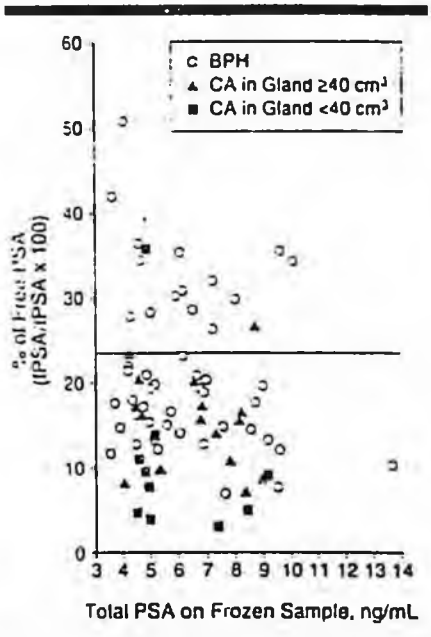


Figure 3.—Percentage of free prostate-specific antigen (PSA) and total PSA (IPSA) concentration in frozen serum from men with benign prostatic hyperplasia (BPH) and men with prostate cancer (CA). The group includes only men without suspicious findings on rectal examination. Cutoff point of 23.4% for greater than 90% sensitivity eliminates 31.3% of biopsies in BPH group.

picious digital rectal examination results (Table 3). Overall, a free PSA cutoff point of 23.4% or lower would have eliminated 31.3% of the biopsies while maintaining 90% sensitivity (Figure 3).

Correlation of Percentage of Free PSA With Cancer Stage and Grade

Within the relatively narrow range of cancer stages represented in our study population, the percentage of free PSA was not associated with the presence of pathologically advanced cancer (r=.10; P=.50). Similarly, the percentage of free PSA was not correlated with Gleason score (r=-.07; P=.60). Pathological stage and tumor grade were missing for one man who did not undergo radical prostatectomy.

COMMENT

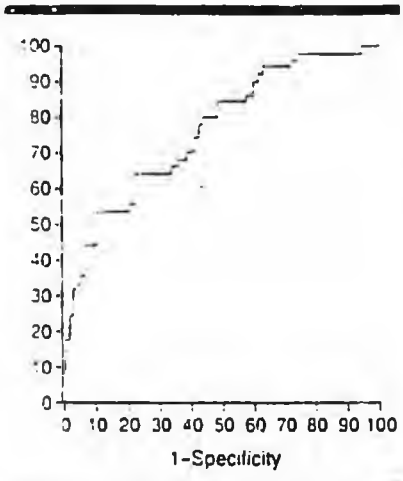
Serum PSA testing for early prostate cancer detection is widely used. Recent studies have shown that measurements of PSA in frozen serum samples drawn more than a decade ago can identify accurately men who developed prostate cancer within 5 to 10 years after the blood samples were drawn.[6,7] These cancers had a high lethal potential, with those patients having high initial serum PSA levels being most likely to have incurable disease.

Prostate-specific antigen may prove to be a valid screening test for early prostate cancer, and a reduction in prostate cancer mortality rates may be achieved by detecting and treating early-stage prostate cancer in men whose life expectancy exceeds 10 years. However, to prove the utility of screening, a reduction in mortality or increase in quality of life in screened patients would have to be demonstrated in prospective studies with length and quality of life as end points.

The chance of achieving cure can be high only with the use of low total serum PSA cutoffs for screening, but low cutoffs (4.0 ng/mL) produce appreciable false-positive results (ie, the positive predictive value is only about 35%) caused by benign hyperplasia or prostatitis. This is particularly true with PSA levels of 4.1 to 10.0 ng/mL in men with findings of benign enlargement on digital rectal examination. Only about 20% of such men have cancer diagnosed by biopsy; however, some men also will have cancer detected by repeated biopsies.[8]

Alternative measures proposed to increase the specificity of serum PSA testing include measuring the rate of change of the serum PSA concentration, called PSA velocity[19,20]; assessing the ratio of blood PSA concentration to ultrasonographically measured gland volume, called PSA density[21]; and using age-specific PSA reference ranges.[22,23] Each of these measures has its own sensitivity-specificity trade-offs that result in either missing a substantial proportion of curable cancers or yielding a high false-positive rate.[24-26] Although it was beyond the scope of this study, we computed sensitivity and specificity in our study groups using published standards for PSA density (ie, 0.15)[27] and PSA age-specific reference ranges (ie, age 50 through 59 years, >3.5 ng/mL; age 60 through 69 years, >4.5 ng/mL; age ≥70 years, >6.5 ng/mL).[22] These calculations show low sensitivity for both measures (48% and 72%, respectively), high specificity for PSA density (87%), and low specificity for age-specific reference ranges (16%). However, these findings cannot be considered a direct comparison with the results reported for the percentage of free PSA because we preset sensitivity for this measure. In a separate logistic model, including age, total PSA, rectal examination results, PSA density, and percentage of free PSA (with both PSA density and percentage of free PSA entered as continuously scaled predictors), both PSA density and percentage of free PSA independently contributed significantly to the prediction of prostate cancer (data not shown). Prospective studies are needed to further compare these methods.

Previous studies have demonstrated that the percentage of serum PSA that exists in the free form is lower in patients with prostate cancer than in those



gure 4.—Receiver operating characteristic curve detection of prostate cancer based on the perntage of free prostate-specific antigen in frozen rum from men with benign prostatic hyperplasia d men with prostatic cancer, regardless of findgs on digital rectal examination.

ith benign hyperplasia; this disparity an be exploited clinically to distinguish etween cancer and hyperplasia.[6,10-12] tenman et al[6,11] and Leinonen et al[12] eported that the use of the ratio of SA-ACT to total PSA could eliminate alf of the false-positive results without ppreciable loss of sensitivity in a study roup of men whose total serum PSA oncentrations ranged from 2.5 to 25.0 g/mL. Christensson et al[13] reported imilar results in 66 men with untreated rostate cancer: specificity was increased using a cutoff level of less than 8% free PSA with only a 10% loss of ensitivity. However, these studies both ncluded heterogeneous patient populaions with a wide spectrum of total serum PSA concentrations, prostatic sizes, nd digital rectal examination findings.

Currently there is little argument bout the need for performing prostatic iopsies in men with very high serum SA concentrations (>10 ng/mL) or hose whose rectal examination findings re suspicious for cancer. For men with hese findings, measurement of free PSA oes not materially influence the decision-making process. However, it is important to examine the results of free erum PSA measurements in men with SA concentrations of 4.1 to 10.0 ng/mL nd benign findings on digital rectal exmination for whom some physicians ay not recommend biopsy. These men requently present a diagnostic dilemma.

The results from our logistic regresion models confirm the findings of preious studies, showing that within the ange of PSA concentrations tested (4.1 o 10.0 ng/mL), the percentage of free SA provides independent predictive nformation about the presence of prosate cancer. Our results extend these observations, showing that the free PSA cutoff required to maintain at least 90% sensitivity of cancer detection was higher in men with an enlarged prostate gland and those with a benign-feeling gland. For example, in men whose prostate size was relatively normal (<40 cm^3), a free PSA cutoff of 13.7% or less would have detected at least 90% of the cancers while eliminating 76.2% of the unnecessary biopsies; however, a cutoff of 20.5% or less was required to detect at least 90% of the cancers in men with a larger gland. This higher cutoff still would eliminate 38.1% of the unnecessary biopsies. For free PSA measurements to be helpful in men whose prostate gland was both enlarged and palpably benign (and whose PSA level was 4.1 to 10.0 ng/mL), the cutoff would have to be increased to 23.4% to detect at least 90% of the cancers. If this cutoff had been used, 31.3% of unnecessary biopsies could have been eliminated. However, under present practice, some physicians would not perform biopsies on older men or men with very large glands.

While avoiding unnecessary biopsies is desirable, missing 10% of the cancers is still of concern. Additionally, not pursuing the diagnosis in men with elevated PSA levels may be more psychologically problematic to some physicians and patients as compared with not pursuing diagnosis in men with normal PSA levels. It has been suggested that this loss of sensitivity may be acceptable because of the general slow development of prostate cancer[6]; however, not all cancers missed are low grade and indolent, and the consequences in terms of missing opportunities for cure also may be greater than for men with normal PSA levels.

We evaluated the reciprocal relationship between sensitivity and specificity by plotting true-positive (sensitivity) vs false-positive (1 − specificity) results in a receiver operating characteristic curve. As shown in Figure 4, sensitivity could have been increased in our sample (ie, >90%) with a modest loss in specificity.

In our study, measurements of the percentage of free PSA did not distinguish between early and advanced cancers, nor did they correlate with Gleason score; however, the range of cancer stages and grades represented in our study was narrow.

Our results should be interpreted with caution. Our study is not definitive in that our sample size is small, especially when cases with suspicious rectal examination findings and/or prostate cancer with a small gland are removed for subset analysis. Additionally, possible loss of detectable PSA immunoreactivity may have occurred from long-term storage of the serum samples. Stenman et al[6] compared the geometric mean of PSA concentrations in fresh control serum samples with those of comparable men whose serum samples had been stored at −20°C for 9 to 13 years (and thawed and refrozen once during that interval) and found a 38% lower mean PSA concentration in the frozen samples. Stenman et al concluded that measurable PSA was lost with prolonged freezing and that the PSA-ACT form was preferentially lost. In contrast, our samples were kept frozen at −80°C, were frozen for 3 to 5 years, and were not thawed and refrozen before testing. As a result, our repeated analyses of total PSA levels showed a much more modest loss in immunoreactivity.

Furthermore, preliminary studies performed in 11 serum samples (excluding one outlier) indicate that both the free PSA and total PSA immunoreactivity remained stable for at least 3 months when stored at −20°C or −70°C. The mean (±SD) free PSA immunoreactivity was 93.1% (±3.7%) of the initial baseline value when serum was stored at −20°C and 99.9% (±3.3%) of baseline when stored at −70°C. The mean (±SD) total PSA immunoreactivity was 97.7% (±2.8%) and 95.4% (±4.6%) of the baseline value when stored at −20°C and −70°C, respectively. The free-to-total ratio (96.4% [±5.5%] of the baseline value when stored at −20°C and 105.3% [±8.5%] when stored at −70°C) also remained stable. Serum specimens (n=4) subjected to five freeze-thaw cycles showed a mean recovery of 99.8% (±4.6%) of baseline values. However, serum samples stored at 2°C to 8°C lost approximately 30% of free PSA and about 15% of total PSA immunoreactivity after 15 days. Further studies of the stability of PSA forms are in progress. In addition, initial sample handling is important; samples frozen within 24 hours showed minimal loss of reactivity, whereas those stored at 4°C for longer periods showed considerable decay. In the current study, samples that showed the greatest divergence on repeated analysis (in either a positive or negative direction) were eliminated; however, our results should be verified using fresh serum samples.

Another caveat in interpreting the results of our study is that our volunteers were selected from a small geographic area and examined by selected clinicians. Since our study groups were neither a randomly selected nor a consecutive series, a selection bias also could have been introduced. For example, our volunteer sample may have been enriched for men with symptoms of benign hyperplasia.

is may have exaggerated the ability percentage of free PSA to distinguish tween benign prostatic hyperplasia d prostate cancer in the 4.1 to 10.0 mL range. Although we did not col- t symptom information in the study pulation from which our samples were rawn, we can estimate likely symptom revalence from a second PSA screen- g study currently ongoing at our in- itution.[1] In a population of community olunteers recruited in a similar fash- n, approximately 50% of the men with- ut prostate cancer and with PSA levels etween 4.1 and 10.0 ng/mL reported one or more symptoms at study entry. For these reasons, the extrapolation of our results to other patient populations is not established and should be confirmed in prospective studies of representative groups of men.

Our results suggest that the use of measurements of free PSA concentrations can reduce unnecessary biopsies in selected men with elevated total serum PSA levels who are undergoing evaluation for prostate cancer. Further studies are needed to define appropriate cutoffs for men with modest total serum PSA elevations and enlarged, palpably benign findings on digital rectal examination, to evaluate the percentage of free PSA in fresh serum samples, and to examine cost-effectiveness of screening with the percentage of free PSA. Ultimately, final evaluation of PSA screening in general also must consider the ability of current treatments to improve the prognosis of men with screen-detected cancers.

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CURRENT CONCEPTS

SCREENING FOR PROSTATE CANCER WITH PROSTATE-SPECIFIC ANTIGEN

An Examination of the Evidence

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AFTER lung cancer, prostate cancer is the leading cause of deaths from cancer among men in the United States. It will claim 40,000 lives in 1995.[1] Studies in the early 1990s demonstrated that levels of prostate-specific antigen (PSA), a serine protease, are elevated in most men with clinically important prostate cancer and that measuring them is the best means for early detection of the disease.[2-5] In 1993, the American Cancer Society recommended that clinicians measure PSA in all men 50 years of age and older as part of an annual prostate examination and that PSA screening should begin at the age of 40 in men at high risk.[6] The American Urological Association issued similar recommendations. Support for PSA screening is not universal, however. Recommendations against PSA screening have been issued by the U.S. Preventive Services Task Force, the Canadian Task Force on the Periodic Health Examination, and the Canadian Urologic Association.[7,8] Recommendations by the American College of Physicians and the American Academy of Family Physicians are currently under review. Physicians in practice have opposing views about PSA screening.[9]

The debate about whether to perform PSA screening has important implications for both individual and public health, but the setting of appropriate policy has been hindered by inadequate data. Screening may reduce morbidity and mortality associated with prostate cancer, but this hypothesis is unproved. On the other hand, widespread testing may set off a cascade of diagnostic and treatment procedures with potentially serious complications, but the magnitude of these risks is uncertain. The overall balance of benefits and harms is therefore unclear. The economic implications of PSA screening are also unknown; testing all men over the age of 50 could cost the country billions of dollars, but the investment might be justified if suffering from prostate cancer could be reduced.

This article reviews the central scientific arguments in the controversy over PSA screening. The discussion is organized around the principal scientific questions that should be asked when one is evaluating any screening test: Is the target condition serious? Is the screening test accurate? Does early detection improve outcome? Is screening or treatment harmful? Does screening do more good than harm?

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ANALYTIC ISSUES

Is Prostate Cancer Serious?

There is little doubt about the seriousness of progressive prostate cancer (tumors that spread beyond the capsule or metastasize). Thousands of men suffer painful complications and die prematurely from such tumors. Ten-year survival rates are 75 percent when the cancer is confined to the prostate, 55 percent with regional extension, and 15 percent with distant metastases.[10] Age-adjusted mortality from prostate cancer has increased by 24 percent in recent years[11] and, largely because of increased screening, the incidence of new cases has risen by 40 percent.[12]

Not all prostate cancers are serious, however, because of the frequently indolent behavior of the disease. Autopsy studies report that about 30 percent of men over the age of 50 have histologic evidence of prostate cancer.[13] Extrapolation of these rates to U.S. census data suggests that as many as 9 million men could harbor latent prostate cancers (Table 1). Since there are about 40,000 deaths each year from the disease,[1] it seems likely that most prostate cancers in the population are not clinically important. Most men with latent prostate cancer die with, rather than from, the disease.

Is PSA Screening Accurate?

Because it might be unethical for researchers to perform biopsies on men with normal PSA results, the true sensitivity and specificity of PSA screening are unknown. The test has a reported sensitivity of up to 80 percent in detecting prostate cancer in screened men,[4] but it lacks specificity. False positive results due to the presence of benign prostatic hypertrophy or prostatitis are common; 25 to 46 percent of men with benign prostatic hypertrophy have elevated PSA values.[23,24] PSA values may also fluctuate by as much as 30 percent for physiologic reasons.[25] The reported positive predictive value of PSA in screening studies is 28 to 35 percent, which means that one third of men with elevated PSA levels (>4 mg per milliliter) will be found to have prostate cancer on biopsy and two thirds will not (i.e., will have false positive results).[2,3,4,5] Participants in these studies were either patients seen at urology clinics or community volunteers, which has caused some to question whether the positive predictive value might be lower when screening occurs in primary care settings.

Promising techniques to improve the accuracy of PSA screening include measuring PSA density[26] (the PSA concentration divided by the volume of the gland) or the rate of change in PSA over time.[27] A third approach is to use age-adjusted reference ranges,[28] since PSA values increase with age. Finally, some advocate measuring the ratio of free to complexed PSA.[29] PSA bound to alpha$_1$-antichymotrypsin accounts for a larger proportion of total PSA in patients with prostate cancer than in those with benign prostatic hypertrophy. No single approach has yet been proved to be more accu-

rate than another. For now, the best way to reduce the frequency of false positive results is to combine PSA screening with the digital rectal examination, which increases the positive predictive value from 32 to 49 percent if the results of both are abnormal.[4]

A more fundamental problem than false positive results, however, has been how to determine whether cancers detected through PSA screening (true positives) are clinically important. As has already been noted, autopsy studies suggest that 30 percent of men over the age of 50 have latent prostate cancers that are unlikely to produce symptoms or affect survival. It has long been feared that population screening would preferentially identify these latent cancers (rather than aggressive disease) and that thousands of men who are more likely to die of other causes (e.g., coronary artery disease) would be subjected to unnecessary testing and treatment for prostate cancer. Recent evidence suggests, however, that cancers detected through PSA screening may be more aggressive and clinically important than latent cancers found on autopsy. About 31 to 36 percent of cancers identified through PSA screening and radical prostatectomy have evidence of extracapsular extension, poorly differentiated cells, large volume, or metastases.[3,30,31] These features are associated with an increased risk of progression, although they are not pathognomonic of aggressive disease. Autopsy studies also report capsular penetration, local tissue invasion, and diffuse or poorly differentiated cells in 10 to 88 percent of men with no antemortem prostate history.[10,19,32] For now, neither PSA values nor histologic findings can predict with certainty whether a newly diagnosed prostate cancer will progress or remain latent.

Does Early Detection of Prostate Cancer Improve Outcomes?

Ultimately, accuracy is less important than clinical outcomes in judging the efficacy of screening. Debates about the relative superiority of density, rate-of-change, and other indexes in improving the accuracy of PSA screening are irrelevant unless early detection improves the patient's health. PSA screening is often defended incorrectly on the basis of what has been discussed thus far, with the evidence that the test can detect organ-confined cancer cited as sufficient grounds for screening. Screening cannot be justified unless patients who are screened have better health outcomes than those who are not. The literature provides such evidence for breast, cervical, and colorectal cancer screening.[2]

There is little direct evidence, however, that screening for prostate cancer reduces morbidity or mortality. Indeed, few controlled studies have ever addressed this question. Observational studies of screening by digital rectal examination reported no benefit,[33,34] and no controlled study of health outcomes after PSA screening has yet been reported. Randomized, controlled trials addressing the health benefits of screening are under way in the United States and Europe, but the results will be unavailable for more than a decade.[35]

There is some indirect evidence that early detection may be beneficial. Men who undergo PSA screening are more likely to have early-stage disease at diagnosis (a phenomenon known as "stage shift") than unscreened men, and the proportion of cancers that are clinically or pathologically advanced appears to decrease with each successive year of testing.[36] Survival data suggest that men with localized tumors at diagnosis live longer than those with more advanced disease.[1] It is unclear, however, whether these findings reflect lead-time and length biases rather than an actual improvement in outcome. (Lead-time bias occurs when survival appears to be lengthened because the diagnosis was made earlier, rather than because death was delayed. Length bias refers to the tendency of screening to generate favorable outcomes by preferentially detecting slowly growing, indolent tumors, as opposed to aggressive tumors that are present in the population relatively briefly.)

One reason for questioning the effectiveness of early detection is the lack of direct evidence that treatment for prostate cancer improves outcomes. Arguments for the effectiveness of the principal treatments for prostate cancer — radical prostatectomy, radiation therapy, and hormonal treatment — are supported mainly by uncontrolled observational reports. The lack of controls and other design flaws limit the persuasiveness of this evidence. A randomized, controlled trial conducted in the 1970s reported that radical prostatectomy did not improve 15-year survival, but the trial suffered from numerous methodologic problems.[37] Well-designed randomized, controlled trials of treatment are now under way in the United States and Europe, but the results will be unavailable for more than a decade.[35]

Skepticism about the efficacy of treatment has been heightened in recent years by evidence that patients with early-stage prostate cancer have good outcomes even without treatment. Johansson[38] and colleagues followed a population-based cohort of 223 Swedish men with initially untreated prostate cancer. After 12.5 years, only 10 percent had died of prostate cancer and 56 percent had died of other causes; the 10-year disease-specific survival rate was 85 percent. Critics argued that survival may have been inflated by the inclusion of a large proportion of older men with small, well-differentiated tumors.[39] Moreover, of the patients

Table 1. Estimated Prevalence of Latent Prostate Cancer in the United States, According to Age.*

Age (yr)	U.S. Population†	Reported Prevalence of Latent Prostate Cancer (%)‡	Projected No. of U.S. Men with Latent Prostate Cancer
50–59	10,632,000	22.1	2,349,672
60–69	9,710,000	36.1	3,505,310
70–79	5,849,000	37.9	2,216,922
≥80	2,155,000	53.7	1,157,235
Total	—	—	9,229,139

*Values are for men over the age of 50, the population for which screening is typically considered. Autopsy studies indicate that the prevalence of latent carcinoma in men 40 to 49 years of age is about 1 percent, and one autopsy study of men 30 to 39 years of age reported a prevalence of 30 percent.[19] Thus, the total population of American men with latent prostate cancer may be larger.

†Data are from the U.S. Bureau of the Census.

‡Values are weighted, age-specific means for cases of latent carcinoma as reported in seven autopsy studies that used systematic sectioning analysis of prostate-gland specimens from a total of 918 patients.[19,32]