

ALASKA LEGISLATURE COMMITTEE FILES 1987-1988 8672  
5534 SSTA SCR 27 - SCR 35

- i. Current and past disruptive influences on or immediately around the site, such as urban development, vandalism, road construction, agriculture, soil erosion, and flooding.
- j. Any standing or ruined structures or buildings that might be of architectural or historic importance.

#### District — Archeological

- a. The cultural, historic, or other relationships among the sites that make the district a cohesive unit for preservation and investigation, and the extent to which these relationships remain intact.
- b. Boundaries of the district, and how they were determined.
- c. A list of archeological sites within the district (their locations and boundaries should be given on USGS maps).
- d. Period of time and cultural groups represented by the district and data substantiating this identification; comparisons with similar sites and districts that have assisted in identification.
- e. A summary of the kinds of sites found within the district and their remains, including artifacts, features, and structures.
- f. Information on individual or representative sites and resources within the district. For small districts, describe individual sites; for large districts, describe the most representative sites individually and others in summary or tabular form or collectively as groups.
- g. Structure and formation of individual sites or groups of sites and their similarities, including stratigraphy, distribution of artifacts, location of features, and past disturbances.
- h. Environmental setting of the district today and in the past, if known, including topography, vegetation, and accessibility to natural resources.
- i. Extent and nature of any excavation, testing, or surface collecting.
- j. Previous archeological investigations in the district, with dates, affiliated institutions or organizations, and bibliographic references.
- k. Any disruptive influences on or immediately around the district such as urban development, vandalism, road construction, agriculture, soil erosion, and flooding.
- l. Any standing or ruined structures or buildings that might be of architectural or historic importance.

### 8. STATEMENT OF SIGNIFICANCE

**Significance of property in relation to other properties:** Properties listed in the National Register must possess significance when evaluated in relationship to other properties locally, statewide, or nationally. Before a property's eligibility can be determined, its significance must be evaluated in relationship to other properties and property types within a specific historic theme, period and geographical area, for example, coal mining in northeastern Pennsylvania between 1860 and 1930. The certifying official completes this item by marking "x" in the box that most closely identifies the level at which this property has been evaluated and, in his or her opinion, has been found to be significant.

**Applicable National Register Criteria:** Mark "x" in one or more of the boxes to indicate the specific National Register criteria under which the property qualifies for listing. Explain how the property meets all criteria marked on the form in the narrative of section 8. The National Register criteria are stated on page 1.

**Criteria Considerations (Exceptions):** Mark "x" in the box for the letter corresponding to criteria consideration(s) applying to the property being documented. The criteria considerations are part of the National Register criteria (see p.1). They identify several kinds of properties that are generally excluded from the National Register and prescribe the special circumstances under which these properties may qualify for listing. Identify all considerations applying to the property and, in the narrative for section 8, explain the special qualifications of the property.

**Areas of Significance:** Using the categories given below, enter the area(s) of significance in which the property meets the National Register criteria. Enter one area of significance in each blank and list areas in order of their importance. If additional space is needed, use a continuation sheet; however, only the first ten entries will be entered in the NRIS data base. Explain how the property is eligible for all areas of significance entered on the form in the narrative for section 8.

### AREAS OF SIGNIFICANCE

<b>AGRICULTURE</b>	The process and technology of cultivating soil, producing crops, and raising livestock and plants.
<b>ARCHITECTURE</b>	The practical art of designing and constructing buildings and structures to serve human needs.
<b>ARCHEOLOGY</b>	The study of prehistoric and historic cultures through excavation and the analysis of physical remains.
<b>PREHISTORIC</b>	Archeological study of aboriginal cultures before the advent of written records.
<b>HISTORIC — ABORIGINAL</b>	Archeological study of aboriginal cultures after the advent of written records.
<b>HISTORIC — NON-ABORIGINAL</b>	Archeological study of non-aboriginal cultures after the advent of written records.
<b>ART</b>	The creation of painting, printmaking, photography, sculpture, and decorative arts.
<b>COMMERCE</b>	The business of trading goods, services, and commodities.
<b>COMMUNICATIONS</b>	The technology and process of transmitting information.
<b>COMMUNITY PLANNING AND DEVELOPMENT</b>	The practical art of designing and changing the physical structure of communities to enhance the quality of life.

<b>CONSERVATION</b>	The preservation, maintenance, and management of natural or manmade resources.
<b>ECONOMICS</b>	The study of the production, distribution, and consumption of wealth; the management of monetary and other assets.
<b>EDUCATION</b>	The process of conveying or acquiring knowledge or skills through systematic instruction, training, or study.
<b>ENGINEERING</b>	The practical application of scientific principles to design, construct, and operate equipment, machinery and structures to serve human needs.
<b>ENTERTAINMENT/ RECREATION</b>	The development and practice of leisure activities for refreshment, diversion, amusement, or sport.
<b>ETHNIC HERITAGE</b>	The history of persons having a common ethnic or racial identity.
<b>ASIAN</b>	The history of persons having origins in the Far East, Southeast Asia, or the Indian subcontinent.
<b>BLACK</b>	The history of persons having origins in any of the black racial groups of Africa.
<b>EUROPEAN</b>	The history of persons having origins in Europe.
<b>HISPANIC</b>	The history of persons having origins in the Spanish-speaking areas of the Caribbean, Mexico, Central America, and South America.
<b>NATIVE AMERICAN</b>	The history of persons having origins in any of the original peoples of North America, including American Indian and Alaskan Eskimo cultural groups.
<b>PACIFIC ISLANDER</b>	The history of persons having origins in the Pacific Islands, including Polynesia, Micronesia, and Melanesia.
<b>OTHER</b>	The history of persons having origins in other parts of the world, such as the Middle East or North Africa.
<b>EXPLORATION/ SETTLEMENT</b>	The investigation of unknown or little known regions; the establishment and earliest development of new settlements or communities.

**HEALTH/MEDICINE**

The care of the sick, disabled, and handicapped; the promotion of health and hygiene.

**INDUSTRY**

The technology and process of managing materials, labor, and equipment to produce goods and services.

**INVENTION**

The art of originating by experiment or ingenuity an object, system, or concept of practical value.

**LANDSCAPE  
ARCHITECTURE**

The practical art of designing or changing land, bodies of water, and natural elements to enhance the physical environment.

**LAW**

The interpretation and enforcement of society's legal code.

**LITERATURE**

The creation of prose and poetry.

**MARITIME HISTORY**

The history of the exploration, fishing, navigation, and use of inland, coastal, and deep sea waters.

**MILITARY**

The system of defending the territory and sovereignty of a people.

**PERFORMING ARTS**

The creation of drama, dance, and music.

**PHILOSOPHY**

The theoretical study of thought, knowledge, and the nature of the universe.

**POLITICS/  
GOVERNMENT**

The enactment and administration of laws by which a nation, State, or other political jurisdiction is governed; activities related to political process.

**RELIGION**

The organized system of beliefs, practices, and traditions regarding mankind's relationship to perceived supernatural forces.

**SCIENCE**

The systematic study of natural law and phenomena.

**SOCIAL HISTORY**

The history of efforts to promote the welfare of society; the history of society and the lifeways of its social groups.

**TRANSPORTATION**

The process and technology of conveying passengers or materials.

**OTHER**

Any area not covered by the above categories.

### Guidelines for Selecting Area of Significance

- o Select the categories that most directly relate to the criteria for which the property qualifies for listing in the National Register.
- o For a property significant under criterion A, select the category relating to the historic event, pattern, or role for which the property is significant such as "transportation" for a railroad station, trolley car, or stagecoach stop.
- o For a property significant under criterion B, select the category in which the significant individual made the contributions for which he or she is known or the property is illustrative, for example, "literature" and "politics and government" for the home of a well-known political theorist and statesman.
- o For a property significant under criterion C, select "architecture," "art," "landscape architecture," "engineering," or "community planning" depending on the type of property and its importance. Generally "architecture" applies to buildings, and "engineering" to structures; however, if a building is notable for its advanced construction technology it may be significant under both "architecture" and "engineering." For example, a 1930s public building significant for its Depression-era mural would be classified under the "art," a cathedral noted as the work of Richard Upjohn and for stained glass by Tiffany under "architecture" and "art"; and an early example of a concrete rainbow arch bridge under "engineering."
- o For a property significant under criterion D, enter the category of archeology and the subcategory that best describes the type of historic or prehistoric group about which the property is likely to yield information. Also enter any categories and subcategories about which the site is likely to provide information, for example, "prehistoric archeology," "agriculture," and "engineering" for the ruins of an ancient irrigation system that is likely to provide information about prehistoric subsistence and technology.

Area of significance should not be confused with historic function. Historic function, entered in section 6, relates to the practical and routine uses of a property, while area of significance relates to the property's contributions to the broader patterns of American history, architecture, archeology, engineering, and culture. For example, a stagecoach stop would be classified under the function for "hotel" and area of significance for "transportation."

If none of the categories applies to the property, enter "other," a colon and the name of the area in which the property achieved significance. Do not enter "local history" under "other," instead select the category that most closely relates to the theme or pattern in local history with which the property is associated, for example, "health/medicine" for the home of an eminent local physician, or "commerce" for the site of a traditional marketplace. To indicate that significance occurred at the local level, mark "x" for "locally" under "significance of property in relationship to other properties." Select "exploration/settlement" only for properties directly associated with the events and persons instrumental in the region or locality's exploration and settlement; properties associated with later generations of founding families should be classified according to the areas in which those individuals, not their forebearers, made contributions.

**Period of Significance:** Enter the period of time in which the property achieved the significance for which it meets the National Register criteria. In each blank enter the numerical dates for the continuous period of time during which the property had significance, for example, 1975 - 1988 or approximately 8,000 B.C. Enter the most specific dates known. If a property's significance occurred in one year, as for architecturally significant properties or battle sites, enter the date of the year. If a property achieved significance during several distinct periods of time, enter each period on a separate line in order of its importance to the significance of the property. Avoid including recent dates within the periods of significance, because events and associations occurring within the last 50 years must be exceptionally important to be recognized as "historic." Continuous function does not necessarily indicate the continuation of the period of significance.

If additional space is needed, use a continuation sheet. Discuss the significant events or associations that occurred during each of the periods of significance in the narrative for section 8.

**Examples:**

1. For the home of an important philanthropist, enter the years of his residence, i.e., 1945-1974.
2. For a Late Archaic habitation site, enter the estimated span of time for its use as a habitation site, i.e. 3000-2500 BC.
3. For the site of a pivotal five-month labor strike, enter the years in which the strike took place, i.e., 1932-1933.
4. For the site of an important political rally, enter the year the event took place, i.e., 1909.
5. For an urban historic district that developed in two significant phases, enter the inclusive dates for each phase, i.e., 1728-1810 and 1865-1925.

**Significant Dates:** Enter the specific years when the events, associations, construction, relocations, or alterations through which the property achieved significance occurred. A property having significance for various reasons may have several dates of significance. The dates should be entered separately in the blanks provided in order of their importance. If additional space is needed, use a continuation sheet; however, only the first three entries will be entered in the NRIS data base.

This item applies to properties whose significance occurred in one or several events spanning a brief period of time, such as the construction of a post office, a battle or political event, the establishment of a county seat, or the burial of a Native-American leader. Properties whose significance spanned many years may not have a specific date of significance, in these cases enter the span of dates under "period of significance" and enter "N/A" under "significant dates."

If a property whose significance spanned several years is also significant for its architecture, its establishment, or specific events occurring during its history, the dates of construction and various events should be entered under "significant dates." For properties significant only for a single event that occurred in one year, the significant date may be the same as the period of significance; in this case, enter the year of the event in the space provided and give more specific dates, i.e. month and day, if known, in the narrative for section 8. Discuss all significant events occurring on the dates entered under "significant dates" in the narrative for section 8.

**Examples:**

1. For an architecturally significant fire station, enter the date of construction, i.e., 1901-1903, and the dates of any significant alterations, i.e. 1921 and 1938.
2. For the building significant as the site of an important presidential debate, enter the year of the debate, i.e., 1958.
3. For a theater whose significance spanned many years and that is not architecturally significant, enter "N/A" and, under "period of significance," enter the years of its active use as a theater.
4. For a courthouse that represents the origins of county government as well as its role as the center of local government for 65 years, enter the year its operation as a courthouse began, i.e., 1887.

**Significant Person:** For all properties meeting criterion B, enter the name of the person with whom the property is importantly associated. Using the format of last name, first and middle names, enter as complete a name as possible, for example, White, Edward Gould. If the individual is listed in the Dictionary of American Biography, enter the complete name as it appears in that source, for example, Jarves, James Jackson. Up to 26 characters, including spaces and punctuation, can be entered in the NRIS data base.

Enter additional names on a continuation sheet, in order of the importance of their association with the property. Only the first name, however, will be entered in the NRIS data base. Discuss the associations and contributions of all persons listed in the narrative for section 8. If the property is not significant under criterion B, enter "N/A."

Because criterion B specifies persons who made significant contributions, the collective contributions of many individuals as in a family, fraternal organization, or ethnic group do not qualify a property under criterion B. Therefore, do not enter the names of families, organizations, or other social groups. The names of several individuals in one family or organization may be entered, however, if each made contributions on his or her own for which the property would be eligible.

If a property is importantly associated with a number of individuals, but no one person is predominant, as in a historic district, enter "multiple." Identify these individuals and the associated resources in the narratives for sections 7 and 8. Enter the name of a property's architect or builder only if the property meets criterion B for association with the life of that individual such as the home, studio, or office of a prominent architect.

**Cultural Affiliation:** For **archeological properties only**, enter the cultural affiliation(s) of the site or district. Cultural affiliation is the archeological or ethnographic culture to which a collection of artifacts or resources belongs. It is generally a term given to a specific cultural group for which assemblages of artifacts have been found at several sites of the same age in the same region, for example, the Cochise culture, Hopewell, Mohawk, Mississippian, Onondaga, and Red Ochre culture.

In some cases, cultural affiliation may be no more specific than the period of time in which the archeological remains were created, for example, Paleo-Indian, Late Archaic, or Classic Period. Although cultural affiliation generally applies to aboriginal prehistoric and historic cultures, non-aboriginal historic groups should be identified according to their ethnic background, occupations, geographical location or topography, or historical events, for example, Norwegian, Sea Islander, Appalachian, and Black Freedman.

Enter cultural affiliations in order of their significance or predominance. Additional affiliations may be entered on a continuation sheet; however, only the first three will be entered in the computerized data base. If the property being documented is not archeological, enter "N/A."

**Architect/Builder:** Enter the name of the architect, builder, designer, landscape architect, or artist responsible for the design or construction of the building, site, structure, object, or district. Using the format, last name, first and middle names, enter as complete a name as possible, for example, Wright, Frank Lloyd. If the person is listed in the Dictionary of American Biography, enter the name as it appears in that source. If an architectural firm bearing the name of an architect is responsible for the building's design, enter the name in the format of last name, first and middle names, and "and company," for example, Green, Samuel M., and Company.

For objects or structures such as sculpture, locomotives, boats, bridges or firetowers, enter the name of the artist, designer, craftsman or manufacturer, for example, Sears and Roebuck or Benton, Thomas Hart. In the case of architectural firms, enter the name, if known, of the persons responsible for the design in order of their importance to the property being documented; if the names of the individual architects or builders are not known, enter the name of the architectural firm as it is commonly known. If a design derives from the stock plans of a company or government agency and is not credited to a specific individual, enter the name of the company or agency, for example, U.S. Treasury, Southern Pacific Railroad or U.S. Army. If the architect or builder of a building, structure, or object is not known, enter "unknown." Do not enter the name of the owner of the property unless the individual was actually responsible for its design or construction.

Additional names may be entered on a continuation sheet; however, only the first two names will be entered in the NRIS data base. If the property being documented is a site, enter "N/A."

**Statement of Significance:** Provide a narrative stating the significant qualities and associations that make the property eligible for listing in the National Register. Explicitly discuss how the property meets each of the National Register criteria, including the criteria considerations, and represents all periods and areas of significance indicated on the form. The statement of significance should consist of a paragraph summarizing the significance of the property and a discussion, in one or more paragraphs, of historic context and the property's relationship to it. Additional facts directly pertaining to the property's eligibility may be included if necessary to establish a property's significance, integrity, or ability to meet one or more criteria considerations.

The statement should be concise, factual, well-organized, and in paragraph form. Continuation sheets may be used if additional space is needed. Only information relevant to the property, its historic context, and its eligibility should be included on the form. Additional documentation should be maintained by the State Historic Preservation Office, certified local government, or Federal agency.

**Summary Paragraph:** The statement of significance should begin with a summary paragraph that briefly explains 1) why the property is significant under the criteria marked on the form, 2) how the property represents a significant theme, property type or period in the prehistoric or historic development of the locality, state, or nation, and 3) how the property is important in each area of significance entered on the form. The

summary should relate the factual data on the property that directly support its eligibility, including specific references to the events, activities, associations, persons, architectural features, or information potential through which the property has attained significance.

The summary paragraph should also identify any criteria considerations applying to the property and briefly explain how the property meets the special requirements for that criteria consideration. A property's ability to meet these requirements must be explicitly stated. For example, the summary should clearly explain how a commemorative property has acquired significance, apart from its association with the person or event it commemorates, through design, age, tradition, or symbolic value.

**Historic Context:** A discussion of historic context follows the summary paragraph and relates the property to the broad patterns of historical development within its community, region, state, or the nation. The discussion should:

- o Identify and discuss historic contexts corresponding to the areas of significance, cultural affiliations, periods and dates of significance, criteria, criteria considerations, and geographic level of evaluation that have been entered on the form and for which the property is significant.
- o Explain the relative importance of the property in each area of significance by indicating that the property has been evaluated against other properties of the same or similar type, period, associations, or theme within the same geographical area. For example, the statement for a residential historic district should discuss how the associations, architectural styles and types, and periods reflected by the district represent one or several important aspects of the historic development of the locality, whether the community has a number of neighborhoods with the same or similar qualities, and how the district is unique or representative in comparison to other districts representing its theme and period statewide or locally.
- o Explain how the period of significance was derived, for example, on the basis of the years of operation as a blacksmith shop or local marketplace in historic time. A more detailed explanation of historic context is needed where the field of similar resources is unlikely to be widely understood, such as vernacular resources or properties associated with unique local events.

Specific facts about the property and its role or contributions to various themes of prehistory or history at the local, state, or national level should be presented in the discussion of context in a logical manner. The guidelines listed on pages 73 to 76 and the kinds of information listed on pages 15 and 16 may be helpful in explaining the significance of a property. For further guidance on developing and documenting historic context, refer to chapter 2, particularly the "Guidelines for Documenting Historic Context on National Register Forms" (pp. 13 - 16).

If the property is part of a **multiple property submission** for which a multiple property documentation form has been submitted, the summary paragraph should:

- o Identify the historic contexts and property types represented by the property. (These should correspond to those documented on the multiple property form.)

- o Provide factual data showing that the property possesses the physical or associative characteristics and qualities of historic integrity required for listing a member of its property type in the National Register.
- o Discuss how the property meets the National Register criteria and any criteria considerations as a member of its property type.

Additional paragraphs should:

- o Discuss any additional significance, referring to any other property types or historic contexts, themes, or areas of significance to which the property relates.
- o Provide background information on the history and prehistory of the geographical area in which the property is located, if such an overview has not been provided in section E of the multiple property form. (Focus on information that places the property and its property type in the overall historical development of the community.)

#### **Guidelines for Evaluating and Stating Significance**

The following questions should be considered when evaluating the significance of a property and determining the information that should be included in the statement of significance. Include in the narrative of section 8 the answers to those of the following questions directly relating to the significance and eligibility of the property being documented.

#### **Building, Structure, or Object**

- a. If the property is significant for its architectural, landscape, or aesthetic qualities, what are those qualities and why are they significant? Does the property retain enough of its significant design to convey these qualities? If not, how have additions or alterations contributed to or detracted from the significance of the resource?
- b. If the property is significant for its association with historic events, what are the historically significant events or patterns of activity associated with the property? Does the existing building, object, or structure reflect in a tangible way the important historical associations? How have alterations or additions contributed to or detracted from the resource's ability to convey the feeling and association of the significant historic period?
- c. If the property is significant because of its association with an individual, how long and when was the individual associated with the property and during what period in his or her life? What were the individual's significant contributions during this period of association? Are there other resources in the vicinity also having strong associations with the individual? If so, compare their significance and associations to that of the property being documented.
- d. Does the property have an unusually important association with its location?
- e. If the property is no longer at its original location, why did the move occur? How does the new location affect the historical and architectural integrity of the property?
- f. How does the property compare with similar resources in the state, region, or locality?

- g. Does the property have possible archeological significance and has this significance been considered?
- h. If the property has significance in archeology, what attributes does it have that could be studied to extract important information? For example: does it contain tools, equipment, furniture, refuse, or other materials that could provide information about the social organization of its occupants, their relations with other persons and groups, or their daily lives? Has the resource been rebuilt or added to in ways that reveal changing concepts of style or beauty?

**Site — Historic**

- a. How does the property relate to the significant event, occupation, or activity that took place there?
- b. How have alterations such as the destruction of original buildings, changes in land use, and changes in foliage or topography affected the integrity of the site and its ability to convey its significant associations? For example, if the forested site of a treaty signing is now a park in a suburban development, the site may have lost much of its historic integrity and may not be eligible for the National Register.
- c. In what ways does the event that occurred here reflect the broad patterns of American history and why is it significant?

**Site — Archeological**

- a. What is the cultural context in which the property is considered significant? How does the site relate to what is currently known of the region's history or prehistory and similar known sites?
- b. What kinds of information can the known data categories yield? What additional kinds of information are expected to be present on the basis of knowledge of similar sites? What similarities permit comparison with other known sites?
- c. What is the property's potential for research? What research questions may be addressed at the site? How do these questions relate to the current understanding of the region's archeology? How does the property contribute or have the potential for contributing important information regarding human ecology, cultural history, or cultural process? What evidence, including scholarly investigations, supports the evaluation of significance? Given the existence of material remains with research potential, what is the context that establishes the importance of the recoverable data, taking into account the current state of knowledge in specified topical areas?
- d. How does the integrity of the property affect its significance and potential to yield important information?
- e. If the site has been totally excavated, how has the information yielded contributed to the knowledge of American cultures to the extent that the site is significant for the investigation that occurred there?
- f. Does the property possess features or qualities for which it might be architecturally or historically important? If so, how are they significant?

### District — Archeological

- a. What is the cultural context in which the district has been evaluated, including its relationship to what is currently known about the area's history and prehistory and the characteristics giving the district cohesion for study?
- b. How do the resources making up the district as a group contribute to the significance of the district?
- c. How do the resources making up the district individually or in the representative groupings identified in section 7 contribute to the significance of the district?
- d. What is the district's potential for research? What research questions may be addressed at the district? How do these questions relate to the current understanding of the region's archeology? How does the property contribute or have the potential for contributing important information regarding human ecology, cultural history, or cultural process? What evidence, including scholarly investigations, supports the evaluation of significance? Given the existence of material remains with research potential, what is the context that establishes the importance of the recoverable data, taking into account the current state of knowledge in specified topical areas?
- e. How does the integrity of the district affect its significance and potential to yield important information?
- f. Does the district possess features or qualities for which it might be architecturally or historically important? If so, how are they significant?

### District — Architectural and Historic

- a. What are the features and characteristics that distinguish the district?
- b. What are the origins and historical developments of the district? Are any architects, builders, designers, or planners important to the district's development?
- c. Does the district convey a sense of historic and architectural cohesiveness through its design, setting, materials, workmanship, or association?
- d. How do the architectural styles or elements within the district contribute to the feeling of time and place?
- e. How have significant individuals or events contributed to the development of the district?
- f. How has the district affected the historical development of the community, region, or state? How does the district reflect the historical development of the community, region, or state?
- g. How have intrusions and noncontributing structures and buildings affected the district's ability to convey a sense of significance?
- h. What are the qualities that distinguish the district from its surroundings?
- i. How does the district compare to other similar areas in the locality, region, or state?
- j. If there are any preservation or restoration activities in the district, how do they affect the significance of the district?
- k. What is the significance of any resources lying outside the period of significance that should be considered contributing (see "statement of description" for architectural and historic districts)?

- l. If the district has industrial significance, how do the industrial functions or processes represented relate to the broader industrial or technological development of the locality, region, state or nation? How important were the entrepreneurs, engineers, designers, and planners who contributed to the development of the district? How do the remaining buildings, structures, sites, and objects within the district reflect industrial production or processes?
- m. If the district is rural, how are the natural and manmade elements of the district linked historically or architecturally, functionally, or by common ethnic or social background? How does the open space constitute or unite significant features of the district?
- n. Does the district have any resources of possible archeological significance? If so, how are they likely to yield important information?

## 9. MAJOR BIBLIOGRAPHICAL REFERENCES

**Bibliographical References:** Enter the primary and secondary sources of information used in documenting and evaluating this property. Do not include general reference works unless they provide specific information about the property or have assisted in evaluating the property's significance.

In a standard bibliographical style, list the author, full title, location and date of publication, and publisher of all printed materials. For articles, list also the name, volume number, and date of the journal or magazine. For unpublished manuscripts, indicate where copies are available. For interviews, include the date of the interview and the name and title of the person interviewed. Cite any study units or other established historic contexts that have been used to evaluate the property. For properties within the National Park System, indicate if the property is included on the List of Classified Structures. If continuation sheets are used, mark "x" in the box labelled "see continuation sheet."

If a property is part of a **multiple property submission**, cite only those sources that mention or were used in evaluating the property being documented.

**Previous documentation on file (NPS):** Mark "x" in the appropriate box(es) to indicate whether a preliminary determination of individual listing under 36 CFR 67 has been requested for the property or whether the property has been previously listed in the National Register, determined eligible by the National Register, designated a National Historic Landmark, or recorded by the Historic American Buildings Survey (HABS) or the Historic American Engineering Record (HAER). If the property has been recorded by HABS or HAER, enter the record number (available from the State Historic Preservation Office).

**Primary location of additional data:** Mark "x" in the appropriate box to indicate where additional documentation about the property is located. Enter the name of the repository of information in the space provided.

## GEOGRAPHICAL DATA

Geographical data entered in this section define the location and extent of the property being registered. The acreage, UTM references, and boundaries should correspond as

closely as possible to the actual extent and configuration of the significant resources making up the property and should be selected on the basis of the property's significance and integrity as discussed in the narratives for sections 7 and 8. The following guidelines should be considered when determining and justifying the boundaries for a property. For additional guidance, see National Register Bulletins No. 21, How to Establish Boundaries for National Register Properties, and No. 12, Definition of National Register Boundaries for Archeological Properties, available from the State Historic Preservation Office or National Park Service.

### Guidelines for Selecting Boundaries

Carefully select boundaries to encompass, but not exceed, the full extent of the significant resources making up the property. The area to be registered should be large enough to include all the features of the property, but should not include "buffer zones" or acreage not directly contributing to the significance of the property.

For **buildings, objects, or structures**, select the boundaries to encompass the single parcel of land that is occupied by the resource and its immediate surroundings. For urban and suburban properties, generally on small lots, boundaries should be based on the legally recorded lot lines that have historically been associated with the resource provided the lot retains its historic integrity. For rural resources and properties on large parcels of land, boundaries may be based on a smaller parcel drawn to immediately encompass the significant resources, including outbuildings; additional acreage or open space may be included if it is associated with the property historically, conveys the property's historic setting and directly contributes to its historic significance. If a substantial amount of the acreage historically associated with a resource has lost its historic integrity, due to subdivision, development, or other changes, the boundaries should exclude the portions no longer retaining integrity or conveying the property's historic setting. The boundaries of buildings should include the land surrounding the building, unless the lot occupied by the building contains no surrounding land as in the central business district of most cities. Additions to buildings, whether historic or contemporary, should be included within the boundaries. Boundaries may be based on:

- o legally recorded boundary lines
- o manmade or natural topographic features such as hedgerows, fencelines, highways, rivers, or parking lots.
- o edges that mark the limits of the concentration of historic or archeological features or a change in the historic character of the area.

For objects such as sculpture, ships and boats, and railroad rolling stock and locomotives, the boundaries may be the land or water occupied by the resource without any surroundings.

For **historic and architectural districts**, select the boundaries for a single parcel of land that encompasses the significant concentration of buildings, sites, structures, or objects making up the district. Boundaries may be based on:

- o visual barriers that mark a change in the historic character of the area or that break the continuity of the district, such as a new construction, highways, or development of a different character.
- o boundaries at a specific time in history, such as the original city limits or the legally recorded boundaries of a housing subdivision, estate or ranch.

- o visual changes in the character of the area due to different architectural styles, types or periods, or to a decline in the concentration of contributing resources.
- o natural topographic features such as a ridge, valley, river, or forest.
- o clearly differentiated patterns of historical development, such as commercial versus residential or industrial.
- o manmade features such as the inside edges of highways, streets, and roads, or the edges of new construction or other structures.

In special cases where a historic or architectural district is made up of discontinuous elements, select boundaries for each of the separate parcels of land comprising the district according to the above guidelines for buildings, sites, structures, objects, and districts. For architectural and historic districts this situation is limited to cases where visual continuity is not a factor of historic significance, where resources are geographically separate, and where the intervening space lacks significance. This situation also applies to districts such as canal systems where manmade components are interconnected by natural components that are excluded from the National Register or where a portion of a historic district has been separated from the rest of the district by intervening development or highway construction and where the separated portion has sufficient significance and integrity on its own to meet the National Register criteria.

For **historic sites**, select boundaries that encompass the area known to be the site where the historic event took place and its immediate setting. Include only portions of the site retaining historic integrity and documented to have been directly associated with the event.

The selection of boundaries for **archeological sites and districts** primarily involves determining the scale and horizontal extent of the significant features. A regional pattern or assemblage of remains, a location of repeated habitation, a location of a single habitation, or some other distribution of archeological evidence, all imply different spatial scales to setting boundaries. Although it is not always possible to determine the boundaries of a site conclusively, a knowledge of local cultural history and related features such as site type can help predict the extent of the site. The setting and physical characteristics of the particular property along with the capability of archeological testing techniques will determine which approach is appropriate in each case. Evidence for determining boundaries generally is obtained through the following means:

- o subsurface testing, including test excavations, core and auger borings, observation of cut banks.
- o surface observation of site features and materials that have been uncovered by plowing or other disturbance or that have remained on the surface since deposition.
- o observation of topographic or other natural features that may or may not have been present during the period of significance.
- o observation of land alterations subsequent to site formation that may have affected the integrity of the site.
- o study of historical or ethnographic documents such as maps and journals.

In special cases these approaches cannot be applied, for example, where an archeological deposit buried at a significant depth is exposed in a cut bank and the extent of the site into the bank cannot readily be determined. The boundaries of such an archeological

property may be determined by conservatively estimating the extent and location of the significant features. A thorough discussion of the basis for boundary selection is required in the boundary justification.

In cases where a portion of a known site cannot be verified because access to the property has been denied by the owner, the boundaries may be drawn along the legal property lines of the portion that is accessible provided that portion by itself has sufficient significance to meet the National Register criteria.

For discontinuous archeological districts, select boundaries for each of the separate parcels comprising the district according to the above guidelines for archeological sites and districts. Archeological districts may include discontinuous parcels when one or several outlying sites have a direct relationship, such as common cultural affiliation or as related elements of a pattern of land use, to the significance of the main portion of the district and where the intervening space lacks significance. In situations where geographically separate sites do not share such a direct relationship, a multiple property submission should be considered.

**Acreage of property:** Enter acreage in the blank provided. The figure given should be accurate to the nearest acre, for example, less than one acre, or 147 acres. However, because the NRIS data base will accept acreage accurate to the nearest tenth, a more precise figure, if known, may be entered. Acreage must be provided for each individual property and district whether submitted individually or as part of a multiple property submission.

**UTM References:** Enter the Universal Transverse Mercator (UTM) grid reference(s) for the location of the property in the blanks provided. Provide UTM references for each property whether submitted individually or as part of a multiple property submission. If the area of a property is less than 10 acres, enter the UTM reference for the point centered on the site.

If the property includes 10 or more acres, draw a polygon of three or more sides on the United States Geological Survey (USGS) quadrangle map enclosing the area, label the vertices of the polygon alphabetically, and enter the grid reference for each vertex in the space provided on the form (see p. 84). UTM references indicate location, not boundaries; therefore the polygon drawn to enclose the property needs only to approximate the actual configuration of the boundaries, unless it is also being used to delineate precise boundaries to supplement the verbal boundary description.

For linear properties of 10 or more acres, such as a railroad, canal, highway, or trail, draw a line indicating the course of the property, mark the points of beginning and end and intervals approximating the major changes in direction, and enter the grid references for those points in the spaces provided.

Four references may be entered on the form. List additional references on a continuation sheet. Up to 28 references may be entered in the NRIS data base. If more than 28 are needed to indicate a property's location or boundaries, label, by the letters A to Z, AA, and BB, the 28 that best describe the property's extent and should be entered in the data base; identify all other references by double letters, for example, CC and DD.

## Instructions for Determining UTM References

The Universal Transverse Mercator (UTM) Grid System provides a simple and accurate method for recording the geographic location of a historic property. The UTM Grid System has a number of advantages over the Geographic Coordinate System of latitude and longitude, particularly speed, precision, and the use of linear, metric units of measure. Determining UTM references involves no complicated geometric constructions and, in its simplest application, requires only a straightedge, a coordinate counter, and a sharp pencil as working tools. (The coordinate counter, a plastic measuring tool, may be obtained from J & J Reproduction and Drafting Supplies, Inc., 9017-F Mendenhall Court, Columbia, MD 21045.)

The UTM grid references may be determined from many USGS quadrangles published since 1950, and all published since 1959. If there is no USGS map with UTM ticks for a location, enter the geographic coordinates for the location of the property using latitude and longitude or a State's grid system.

In the UTM system, the Earth is divided into 60 zones, running north and south, each 6 degrees wide. Each zone is numbered (most of the USA is included in zones 10 through 19), beginning at the 180-degree meridian near the International Date Line. On a USGS map, each zone is flattened and a square grid marked off is in meters superimposed upon it. Any point in the zone may be referenced by citing its zone number, its distance in meters from a north-south reference line ("easting"), and its distance in meters from the Equator ("northing"). These three figures — the zone number, easting, and northing — make up the complete UTM grid reference for any point and distinguish it from any other point on Earth.

The simplest method of determining a UTM reference is based on drawing part of the UTM grid on the map, and measuring from the grid lines to the point. It requires the following:

- o a flat work surface on which the map may be spread out in full,
- o a straightedge (ordinary rulers may not be accurate enough) long enough to reach completely across the map — generally 28" to 36,"
- o a very sharp pencil,
- o an ink pen for recording references, and
- o a UTM coordinate counter.

To measure each point, follow these steps:

1. Draw a line from the top of the map to the bottom (north to south), connecting the UTM ticks of the same value directly west of the point, that is the ticks with the highest easting value west of the point.
2. Draw a line from the left to the right side of the map (west to east), connecting the grid ticks of the same value directly south of the point, that is the ticks with the highest northing value south of the point. This line will intersect the north-south line somewhere to the southwest of the point.
3. Record the zone number on a worksheet. This number appears in the lower left corner of the map.
4. Record on a worksheet the numbers given by the map ticks through which the lines have been drawn. These are the first three digits of the easting value and the first four digits of the northing value.

5. Locate the scale on the coordinate counter matching that of the map, eg. 1:24,000. Align the counter on the map so that:
  - a. the side of the scale that reads from right to left lies along the east-west line.
  - b. the side of the scale that reads from left to right passes directly through the point.
 Check the alignment to be sure that it is precise.
6. Read the coordinate counter scales, right to left for the easting and upward for the northing to get a measured value in three decimal places. In each case, enter the measured value on the worksheet after the number recorded in step 4.
7. Check the readings for plausibility — are all figures in the correct decimal place? The easting will have six digits and the northing seven.
8. Check the figures for accuracy by remeasuring.
9. Be sure that the correct order is observed: zone number, easting, northing (Z,E,N).

For more information, refer to National Register Bulletin No. 29, Using the UTM Grid System to Record Historic Sites, available from the State Historic Preservation Office or the National Park Service.

**Verbal Boundary Description:** Provide a verbal description of the precise boundaries for the property. Complete this item for all properties regardless of acreage or resource type. The verbal boundary description should precisely delineate the acreage rather than merely indicate the general location of the property. It may be the name of a city lot, a sequence of metes and bounds, or the dimensions of a parcel of land fixed upon a given point such as the intersection of two streets, a natural feature or a manmade structure. If only a portion of a city lot is included, identify the specific portion, for example, the south 1/2 of Lot 36 or the eastern 20 feet of Lot 57.

The verbal boundary description may refer to a line drawn on a base map accompanying the nomination form, if the map is drawn to a scale of at least of 1"=200 feet and if boundaries of property are clearly drawn on the map in relationship to standing structures or natural or manmade features such as rivers, highways, or shorelines. Plat, local planning, or tax maps may be used for this purpose. The scale and a north arrow must appear on all maps used for this purpose. If the property is large enough, a simple reference to the boundary line on the USGS map may be sufficient. If USGS quadrangle maps are not available, provide a map of similar scale and a careful and accurate description including street names, property lines or geographical features that delineate the perimeter of the boundary. If maps are being used in place of a verbal boundary description for several properties in a **multiple property submission**, the boundaries of and identity of each property may be marked on the same map to be included with the submission (see pp. 35).

A verbal boundary description may indicate street names, property lines, geographical features and other lines of convenience if the previously mentioned options are not feasible. Such a description should commence at a fixed reference point and proceed to follow the perimeter, incorporating both dimensions and direction. When streets, highways, and other roadways or right-of-ways are used as boundaries, the boundaries should be drawn along one side of the road or right-of-way or the other but not the centerline.

Examples:

1. The boundary of Livermore Plantation is shown as the dotted line on the accompanying map entitled "Survey, Livermore Plantation, 1958."
2. The nominated property occupies city lot 78 and is roughly 50' x 100' in size.
3. Beginning at a point on the east bank of the Lazy River and 60' south of the center of Maple Avenue, proceed east 150' along the rear property lines of 212-216 Maple Avenue to the west curblineline of Main Street. Then proceed north 150' along the west curblineline of Main Street, turning west for 50' along the rear property line of 217 Maple Avenue. Then proceed north 50' to the rear property line of 215 Maple Avenue, turning west for 100' to the east bank of the Lazy River. Then proceed south along the river bank to the point of origin.
4. The nominated property is the west 125 feet of city lot 49.
5. The boundary of the nominated property is delineated by the polygon whose vertices are marked by the following UTM reference points: A 13 313500 4136270, B 13 312770 4135940, C 13 313040 4136490.

For rural properties where it is difficult to establish fixed reference points such as highways, roads, legal parcels of land, or tax parcels, reference may be made to the section grid appearing on the USGS map, for example, the NW 1/4, SE 1/4, NE 1/4, SW 1/4 of Section 28. Where less than one acre is being documented, the dimensions of the property fixed upon a single reference point within the property itself may be used for the verbal boundary description, for example, the property is a rectangular parcel whose measuring 50 x 100 feet, whose northwest corner is 15 feet directly northwest of the northwest corner of the foundation of the barn and whose southeast corner is 15 feet directly southeast of the southeast corner of the foundation of the farmhouse.

Generally, where setting is a part of a property's historic significance and retains historic integrity, boundaries should not be drawn at the perimeter walls of a building or structure.

For objects such as sculpture, ships and boats, railroad locomotives or rolling stock, and aircraft, the boundary description may refer to the extent or dimensions of the property and its location, for example, the ship at permanent berth at Pier 56; the statue whose boundaries form a circle with a radius of 17.5 feet centered on the statue located in Oak Hill Park.

**Boundary Justification:** Regardless of the size of the property, provide a brief and concise narrative explaining the rationale for selecting the boundaries that encompass the property being registered. The justification should state the basis for determining each boundary and should conform to the "Guidelines for Selecting Boundaries" (pp. 77). The complexity of the discussion depends on the nature of the property, the irregularity of the boundaries, and the methods used to determine the boundaries.

Boundaries for archeological properties must be carefully justified. The case for listing depends on the kinds of methodology employed, distribution of known sites, reliability of survey-based predictions, and amount of unsurveyed acreage.

Examples:

1. The boundary includes the entire city lot that has historically been associated with the property.
2. The boundary includes the farmhouse, outbuildings, fields, orchards, and forest that have historically been part of Meadowbrook Farm and that maintain historic integrity. That parcel of the original farm south of Highway 61 has been excluded because it has been subdivided and developed into a residential neighborhood.
3. The southern boundary of the site is established by the limit of cultural materials and features and roughly corresponds to a lowering in grade. The highest artifact densities recovered during surface collection were noted at the northern and western edges of the plowed field. By extrapolation, it is likely that the site extends into the wooded areas to the north and west. The western boundary is established by the railroad cut which corresponds roughly to the original terrace edge. The northern and eastern boundaries are set by the contour line marking an abrupt fall to the wetland.

## 11. FORM PREPARED BY

Enter the name, title, organization, address, and daytime telephone number of the person or persons who compiled the information contained in the registration form. The State Historic Preservation Office, the Federal Preservation Office, or the National Park Service may contact this person if a question arises about the form or if additional information is needed. Also enter the date the form was completed.

## ACCOMPANYING DOCUMENTATION

### A. CONTINUATION SHEETS

Continuation sheets may be used when the space on the registration form is insufficient to enter all the information necessary for documenting a property. Use the National Register Continuation Sheet (NPS 10-900-a) in all cases, and type the name of the property, number of the section being continued, and the number of the continuation sheet for that section in the space provided at the top of each sheet. When using a single sheet to continue several sections, organize information numerically according to section numbers. When using one or more sheets to continue a section, number each sheet according to the number of the section being continued and the page number for that section, for example, 7.2, 10.1, and 8.3. When using continuation sheets for sections 7, 8, 9, or 10, mark "x" in the box labelled "see continuation sheet" for that section.

Continuation sheets may also be used to update or revise a previously approved nomination or determination of eligibility, when the revision or additional information is not substantial enough to warrant revising the entire form. In these cases, continuation sheets must be signed by the State or Federal Preservation Officer or accompanied by a letter from the official stating that all procedures under 36 CFR Part 60 have been completed, that the information is accurate, and that he or she agrees with the revisions or additional information.

A continuation sheet may be used for signatures of commenting officials or for the opinion of a certifying or commenting official when he or she disagrees with the text of the form or does not believe the property meets the National Register criteria (see pp. 46 - 48).

## B. MAPS

**Geographical Map:** Submit a map clearly locating the property within a city or broader geographical context with each registration form. Whenever possible, submit a 7.5 or 15 minute series United States Geological Survey (USGS) Map. Do not submit fragments or copies of USGS maps because they cannot be checked for UTM reference points. If there is no USGS map in print for the area, a State highway map or, for maritime resources, nautical charts are acceptable.

The map must identify:

- o the name of the property
- o the location of the property, or if 10 acres or more, the boundaries within a polygon whose vertices correspond to the UTM references in section 10 or, for linear properties, a line indicating the course of the property whose points of beginning, end, and major shifts in direction correspond to the UTM references in section 10.
- o a north arrow (magnetic or true)
- o the UTM references for the location of the property or, if 10 acres or more, the references for the vertices of the polygon drawn to encompass the property or, for linear properties, the points of beginning, end, and major shifts in direction (see pp. 79).

If the property is part of a multiple property submission, the location and UTM's for several properties may be indicated on a single USGS quadrant map (see p. 35).

**Sketch Map:** Submit at least one detailed map or sketch map for districts and properties containing a number of sites, structures, or buildings. Plat books, insurance maps, bird's-eye views, district highway maps, and hand-drawn maps may be used. All maps must be archivally stable and should fit folded into an 8 1/2 by 11 inch folder. Information may be clearly displayed on maps by coding, cross-hatching, numbering, transparent overlays, or other graphic techniques. Do not use color coding because it can not be reproduced by microfilming or photocopying.

A sketch map does not need to be precise in scale (unless it also substitutes for the verbal boundary description), but should identify or be keyed to identify:

- o the boundaries of the property, carefully delineated
- o the names of streets and places, including street numbers to locate resources discussed in sections 7 and 8.
- o highway numbers
- o a north arrow (magnetic or true)
- o approximate scale
- o contributing buildings, sites, structures, and objects, keyed to the photographs and the discussion in sections 7 and 8.
- o noncontributing buildings, sites, structures, and objects, keyed to the photographs and the discussion in sections 7 and 8.
- o for rural districts, land use, and natural features, for example, woods, fields, orchards, quarries, or bodies of water.

Sketch maps should also be provided for archeological sites and districts to show the location and extent of disturbances, including previous excavations, as well as the location of specific significant features and artifact loci. The distribution of sites in a district should be indicated on the sketch map or, for areas 10 acres or more, the USGS map. Sketch maps of representative sites within a district may be used to supplement the descriptive narrative.

Sketch maps may also be used to supplement the description of the evolution of a property, including alterations. They may also be used to indicate where major architectural styles, periods, or building types occur in a historic district.

If tax maps or large area maps are used and the property is part of a **multiple property submission**, the boundaries and other information for several properties may be indicated on a single map (see p. 35).

### C. PHOTOGRAPHS

Submit clear and descriptive, black and white photographs with each nomination form. Photographs should give an honest visual representation of the historical integrity and significant features of the property. They should illustrate those qualities discussed in the description and statement of significance.

Photographs should be unmounted, medium weight, black and white glossies of high quality. They may vary in size from 3 1/2 x 5 to 8 x 10 inches (preferred size) and should be printed on a fiber-based rather than synthetic paper. Resin-coated photographic papers are not recommended, because they do not have longterm stability. **After October 1, 1988, resin-coated papers will no longer be accepted.**

One copy of each view is sufficient, although the number of views needed will vary according to the complexity of the property. Photographs must clearly depict the current condition of the property. Prints of historic photographs may supplement documentation and may be particularly useful in cases where alterations make a property's historic integrity questionable.

Photographs should be labelled in pencil on the back and, for districts, keyed to the sketchmap. Do not use self-adhesive labels because over time they separate from the photograph and their acidity causes the photograph to deteriorate. **After October 1, 1988, photographs with adhesive labels will not be accepted.** (Note, resin-coated papers do not accept pencil marks.)

The following information should be carefully printed in pencil in the order given in the upper left corner of the back of each photograph:

- 1) name of property or, for districts, the name of the building or street address followed by the name of the district.
- 2) city and State where the property is located
- 3) name of photographer
- 4) date of photograph
- 5) location of original negative
- 6) description of view indicating direction of camera
- 7) photograph number as keyed to the accompanying sketch map

If a number of photographs are being submitted with a registration form, they may be numbered and the above information typed on a continuation sheet to accompany the form. In this case, carefully print the name of the property and the number of the photograph in pencil in the upper left corner on the back of each photograph. Enter "photographs" in the space for "section" and the page number for the section on the continuation sheet. List and number the information for items 1 through 7 for each photograph. Information that is the same for all photographs, such as the name and location of the property, name of photographer, location of original negative, and date of photograph, may be listed once in the beginning with a statement that this information is the same for all the photographs listed. For items that differ, such as description of view and name of building or street within districts, indicate the photograph number and the information by item number. Organize all information according to the numbers assigned to the photographs.

By allowing a photograph to be submitted to the National Park Service with a National Register form, photographers grant permission to the National Park Service to use the photograph for publication and other purposes, including duplication, display, distribution, study, publicity, and audio-visual presentations. Other agencies, persons, and organizations wishing to use photographs that are included in National Register records should request permission separately.

**Building, Structure, or Object:** Submit as many photographs as necessary to depict the property clearly. One of the photographs should show the principal facades and the environment or context in which the property is located. Additions, alterations, intrusions, and dependencies should appear in the photographs. If the property is noted for its significant interiors, outbuildings, landscaping, or other unusual details, include representative views of these features.

**Site — Historic and Archeological:** Submit as many photographs as necessary to depict the condition of the site and present features. If relevant to the evaluation of significance, artifacts that have been recovered from the site may be illustrated in photographs or drawings. At least one photograph should show the physical environment and configuration of the land making up the site. Photographs should also illustrate surface evidence of archeological features or site disturbances.

**Districts — Architectural and Historical:** Submit as many photographs as necessary to depict a cross-section of building types and styles, pivotal buildings, and important topographical or spatial elements that define the character of the district. Streetscapes, landscapes or aerial views are recommended. Views of individual buildings are not necessary, if streetscapes and other views clearly illustrate the significant historical and architectural qualities of the district. Photographs should also depict representative noncontributing resources and their setting. Key all photographs to the sketch map for the district.

### AMENDING REGISTRATION FORMS

The documentation on National Register Registration Forms may be revised, expanded, or updated as new information is gathered. Requests may also be made for changes to the boundaries of registered properties.

The Juneau Citizens for Quality Education supports both SCR 97 and SB 271. We know you are all aware of the current fight to save Capital School, but you may not realize that there are schools all over the state which are facing the same threat that Juneau's downtown school faces. In Sitka, a lovely, small elementary school, the Whitecliff School, has been facing closure threats over the last few years. The Main School in Fairbanks would be in danger if population declines. The Akiak Elementary School in Akiak is a delightful school complete with bell tower.

What many of these schools have in common is that they are older, they are small, they are downtown, and they have significant meaning to the community. These commonalities are important because at least two of these points mean higher educational value. Small schools are better for elementary children. They are more intimate, kid-size. All adults in the building are able to get to know the children. There is the possibility for more flexibility, less sheer management control, which means that even very young children have more autonomy, self-reliance within a safe environment. Our oil money, however, has set us on the path of big and new, so that the only choice we are giving our parents is elementary schools of 500+ students. That is institutionalizing young children.

In addition to size, the importance to a community of having a downtown school is children near where parents work. This means, in the urban communities, that parents who might not otherwise be able to participate in their children's day, can easily take a short time off work and interact with the school, or share lunch with their child. In a time where we increasingly have the single or both parents employed, anything we can do to help families is very important. Educationally, this proximity is extremely important, since studies consistently show that parent participation is a major factor in the quality of education or of childcare at any level.

Nationally, schools are having to address the needs of employed parents, and another advantage to downtown schools, or schools where large groups of parents are employed, is that those schools tend to become the leaders in offering Latchkey programs through Community Schools to provide safe after-school care for small kids who would otherwise (and too frequently do) go home to an empty house or apartment.

These schools are older and do require some special maintenance efforts, yet closing them is extremely costly to the State, for as we close schools, we are forced to build new ones. What may cost a few hundred thousand over several years to bring an older school up to the new codes, would cost millions when a new school is contemplated. Using Capital School as an example, the District plans to save \$300,000 while our last new school cost the state \$14 million. Most schools like Whitecliff and Akiak which are wooden, become fully protected from fire by installing working sprinkler systems. According to our local fire chief, the national fire statistics indicate there has never been a fatality in a building with a working sprinkler system. It makes sense for the State to offer some, small help to communities who request help to upgrade these older buildings, than to dip deeply into capital monies to build new ones, when they are not absolutely needed.

Schools are our cultural heritage. The older ones have been the gathering centers of community life as villages and cities have grown up. They have been the symbols of a better life for the children of Alaska's miners, loggers, fishers, trappers as they have come to our state for a new start.

These older schools are better for children educationally, cost efficient to the State, support employed families and remind of us of our proud heritage.

SCR

34

FISCAL NOTE

REQUEST:

Revision Date: \_\_\_\_\_ Agency Affected: Office of the Governor  
 Title: Relating to the establishment of a commission on Alaska-Soviet relations BRU: Executive Operations  
 Sponsor: Hensley, Josephson, Sturgulevski Components: Executive Office  
 Requestor: Governor

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
PERSONAL SERVICES	21.7	32.6				
TRAVEL	22.4	44.8				
CONTRACTUAL	10.6	25.0				
SUPPLIES	1.0	1.5				
EQUIPMENT	10.0	.5				
LAND & STRUCTURES	2.7	4.1				
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	68.4	108.5	-0-	-0-	-0-	-0-

CAPITAL						
---------	--	--	--	--	--	--

REVENUE						
---------	--	--	--	--	--	--

FUNDING: (Thousands of Dollars)

GENERAL FUND	68.4	108.5	-0-	-0-	-0-	-0-
FEDERAL FUNDS						
OTHER						
TOTAL	68.4	108.5	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME	1	1				
PART-TIME						
TEMPORARY						

ANALYSIS : (Attach a separate page if necessary)

Analysis is attached.

Prepared by: Michael A. Nizich *MN* Phone: 465-3616  
 Division: Administrative Services Date: 1/14/88

Approved by Commissioner: \_\_\_\_\_ Date: 1/12/88  
 Agency: Office of the Governor

Distribution (by preparer):

- Legislative Finance
- Legislative Sponsor
- Requestor
- Office of Management and Budget
- Impacted Agency(ies)

SCR 34 requests the Governor to appoint a nine-person commission on Alaska-Soviet relations to explore and identify areas of mutually beneficial interactions and to prepare and submit findings and recommendations for the Governor and the Legislature by February 1, 1989.

This analysis assumes the commission will be housed in the Office of the Governor and will remain in existence from January 1988 through March 1989. Fiscal analysis provides for salary and benefits for administrative support staff (Administrative Assistant, Range 16A) for this period; travel and per diem costs as provided in AS 39.20.180 for boards and commissions members appointed by the Governor assuming four two-day full commission meetings in FY 88 and eight meetings in FY 89; contractual funds for professional services, communication, transportation, advertising, printing and binding, minor repair and maintenance of equipment, rental of buildings for meetings and hearings, and other contractual expenses; supplies; equipment required for office set up and operation including word processing equipment and office furniture; and space rental for commission staff.

SCR

35

SENATE COMMITTEE REPORT

FIRST COMMITTEE OF REFERRAL

Date of 2/24/88 5-DAY NOTICE  
IN ACCORDANCE WITH UNIFORM RULE 23

FURTHER:

\*\*FISCAL NOTE(S) ATTACHED  \*\*  
IN ACCORDANCE WITH AS 24.08.035  
(see below)

1/15/88  
Mr. President:

DATE TURNED INTO OFFICE 3-22-88

State Affairs Committee considered SCR 35

Fetal Alcohol Syndrome Awareness Week

and recommended:

replace with CS SCR 35  same title  
 attached amendment(s) and  new title

do pass

do not pass

no recommendation

individual recommendations

further referral to \_\_\_\_\_

letter of intent adopted and attached

\*\* Committee  attached or  adopted fiscal note(s)  
 zero  fiscal impact

MEMBERS SIGNING TO PASS

OTHER RECOMMENDATIONS

*Fuller Do Pass*  
*Wicki*  
*Stann*  
*Joe Johnson*

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*[Signature]*  
Chairman signature and recommendation

Committee Backup Attached

FISCAL NOTE

REQUEST:

Revision Date: \_\_\_\_\_  
Title: Relating to Fetal Alcohol  
Syndrome Awareness Week  
Sponsor: Binkley et al.  
Requestor: \_\_\_\_\_

Agency Affected: Health & Social Services  
BRU: State Health Services

Components: Nursing, Family Health

MAR 1 1988

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS : (Attach a separate page if necessary)

The enactment of SCR 35 would have no direct fiscal impact on the Department of Health and Social Services.

Prepared by: Elizabeth Ward, Director Phone: 465-3090  
Division: Public Health Date: 1-20-88

Approved by Commissioner: Moyce De Neverson Date: Jan 25, 1988  
Agency: Department of Health & Social Services

- Distribution (by preparer):
- Legislative Finance
  - Legislative Sponsor
  - Requestor
  - Office of Management and Budget
  - Impacted Agency(ies)

RECEIVED JAN 28 1988

Position Paper

SCR 35

For a Resolution entitled: "Relating to Fetal Alcohol Syndrome Awareness Week."

SCR 35 requests the governor to proclaim the week of May 8 - 14, 1988, Fetal Alcohol Syndrome Awareness Week.

It is well known that there is a high level of alcohol use in Alaska. Developing knowledge of the effects on the fetus of alcohol use by the pregnant woman has raised the level of concern about fetal alcohol syndrome and fetal alcohol-related birth defects. Because of underreporting, there is no available estimate of the occurrence of fetal alcohol syndrome in the state; however, a special study revealed 4.1 cases per 1,000 live births in the Native population. This compares with rates in France and Sweden of 1.4 cases, in the contiguous 48 states of 1.7 cases, and among the Navajo of 2.0 cases per 1,000 live births.

The consequences of fetal alcohol syndrome can be disastrous for the individual and the family. In addition, costs associated with care of an affected child can be enormous, particularly if modalities such as neonatal intensive care or institutional care are required.

The department endorses the intent of the Resolution in the hope that heightened awareness of the problem can be a step toward its solution.

Recommended by:

*Elizabeth Ward*

Elizabeth Ward, M.N.  
Director  
Division of Public Health

Date:

*January 25, 1988*

Approved by:

*Myra M. Munson*

Myra M. Munson  
Commissioner  
Department of Health and  
Social Services

Date:

*January 25, 1988*

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**SPECIAL REPORT**

*When pregnant mothers drink, their babies can be born deformed or retarded — doomed to a life of misery. No group in the United States has a higher rate of alcohol-caused infant deformities than Alaska Natives.*

# A curse upon the unborn



Anchorage Daily News photo by Michael Perry

By ELIZABETH PULLIAM  
Daily News reporter

**A** tiny baby struggles in a hospital incubator and lets loose a muffled cry. His wrinkled face turns red from the effort, while pencil thin ribs stand in sharp relief on his palm-sized chest. The baby has been isolated in the plastic box because he has almost no fat on his scrawny, 4-pound body and because one of the walls in his heart hasn't completely formed.

The hole in his heart will eventually heal, either on its own or with a surgeon's help. Eventually, too, he will put on weight, although he always will be a small, spindly child.

But nothing will change the damage to his brain or the wreckage on his face. This child, who could have been an Einstein or a leader of his people, or just a normal, healthy boy, will not be like other children. His face will be flat, his lips thin, his eyes curiously folded. He will be susceptible to sickness and seizures. The stunted brain inside his tiny head may never learn to read a book or count the fingers on his hands.

The baby's deformities are not the result of a rogue gene, an unnatural trauma or some act of God.

He is the way he is because his mother drank.

Alaska Natives have the highest known rate of fetal

See Page A-8, FETAL

◆

**A PEOPLE**

**IN PERIL**

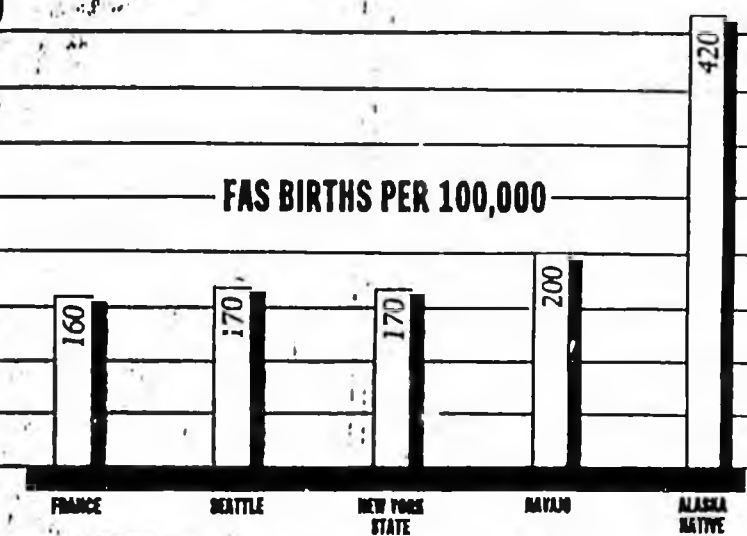
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### TODAY

The destructive power of alcohol reaches to the most innocent of all, the generation of Alaska Natives just being born to mothers who drink. In the fourth day of the Daily News' 10-day series on self-destruction in the Bush, reporter Liz Pulliam writes about fetal alcohol syndrome, an entirely preventable disease that affects Natives more than any other group in the United States. These children who suffer from their mothers' drinking have reduced mental capacity, smaller bodies and a greater susceptibility to disease than healthy children.

Nicholas Kvaanikoff, 8, sits in a stroller from his older brother, Mack, Jr., at school. Both suffer from fetal alcohol syndrome.

# FETAL ALCOHOL SYNDROME (FAS)



## FAS CHARACTERISTICS

### Facial Distortion

- Small eye openings
- Flat upper lip (no groove)
- Thin upper lip
- Flat midface

### Heart, Liver and Kidney Problems

### Growth Retardation in Height and Weight

### Vision Problems

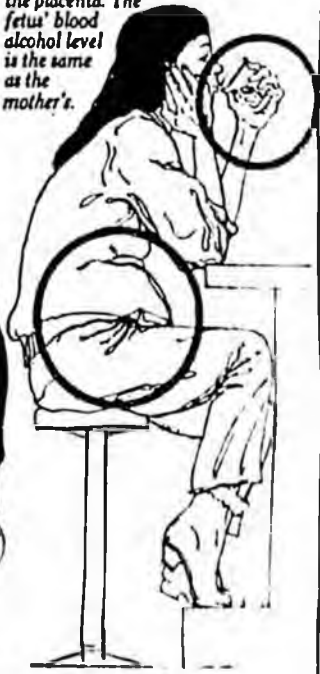
### Small Head Circumference

### Smaller, Deformed Brain

FAS is the most common



The mother's blood alcohol level is transferred directly to the fetus through the placenta. The fetus' blood alcohol level is the same as the mother's.



The alcohol level in a mother's breast milk is the same as her blood alcohol level.

Continued from Page A-1

alcohol syndrome in the country. Alcohol stunts one in every 25 Native babies, and the full-blown syndrome — arrested growth, organ defects, facial deformities and mental retardation — mars at least four of every 1,000 infants born to Native women, according to the Alaska Native Health Board.

That's more than twice the rate discovered among the Navajos, the only other Native Americans who have been studied, and two and a half times the rates in Seattle and New York.

The Alaska figure only counts children identified by health aides at village clinics or pediatricians at the Alaska Native Medical Center.

"Not everyone comes into the clinics. I think there are a lot of addicted women we just don't see," says Jerry Nasenbeny, a pediatrician at the medical center.

No one knows the FAS rate for other Alaskans. The state health department has never surveyed the general population, and private doctors aren't required to report children they think might be affected by alcohol. But the Native health board and many pediatricians believe the non-Native rate is also high.

"We know of one (non-Native) woman in Homer who has had seven FAS kids," says Vicki Hild, coordinator of the board's FAS prevention program. "The youngest is 8 months old. And the mother is still drinking."

These children carry an enormous financial cost. Their hospital bills, special education and welfare payments — virtually none will ever be able to live independently — will run at least \$1 million in each child's lifetime.

But what bothers

pediatrician Nasenbeny most is the human potential lost.

"This is an entirely preventable syndrome," he says. "These kids could have been Rhodes scholars. We'll never know."

#### THE CHILD AS VICTIM

Mack Kvasnikoff Jr., now 9, was the first to show the effects of his mother's drinking.

His four older brothers and sisters had been normal, healthy children. Three were born before their mother started drinking, and the fourth, now a pretty 16-year-old, shows no ill effects from her mother's occasional drinking during pregnancy. But Mack wasn't so lucky. His mother drank

heavily and didn't stop or even slow down when she found out she was pregnant with him.

Mack Jr.'s round, wide-set eyes and thin lips were apparent from birth. When he reached school age, he fell behind the other children and had to be left back a grade.

"The public health nurses gave me pamphlets (about alcoholism and FAS). I threw them away," remembers his mother, Justina, a 38-year-old resident of English Bay. When friends commented on the child's small size, she would say, "He's short like me. He's skinny like his dad."

By the time Justina's sixth child, Nicholas, was born in 1982, the Kvasnikoff family had almost fallen apart. Justina and her husband,

Mack, fought constantly over booze and hoarded bottles from each other.

Mack Jr. remembers going to school with uncombed hair and dirty jeans. The oldest daughter, Kathy, now 21, remembers her parents passed out in the cluttered living room while the children struggled to make some kind of dinner — usually scrambled eggs, because that was all they could manage.

Justina remembers her state of mind during those chaotic, ugly days, and it was brutally single-minded: all that mattered was alcohol.

"When Nicholas was 6 months old he got sick . . . Timmy (the oldest son) told me he might die," she says. "All I thought was, 'So what? Then I

will be free. Free to drink some more.'"

Today, Justina sits at her Formica-topped kitchen table, her eyes following little Nicholas as he bounces away to watch Sesame Street on TV. Nicholas also turned out to be a FAS child. At 5 he has the body and mind of a 3-year-old. Nicholas is also deaf, the result of an diabetes-related illness at 6 months. Doctors told Justina his deafness wasn't directly caused by FAS, but she says she still feels responsible.

But though small and prone to sickness, Nicholas is as bright-eyed and rambunctious as most children, and he wrestles playfully with his older brother Mack before settling down in front of the screen.

The wall over their heads holds a Russian Orthodox shrine, with votive candles and pictures of Jesus that look over the small, spotless living room. A pot of coffee steams on the counter, completing a scene of order and neatness, an island of domestic tranquility in this wind-whipped village south of Homer.

But Justina still vividly remembers what the home looked like five years ago. Clothes and debris were scattered everywhere. Dirty dishes piled high in the sink. The smell of unwashed bodies and unemptied ashtrays hung in the air.

She also remembers what she looked like then. Now a soft-spoken, smiling woman with bright eyes and a pixie haircut, then she was an unkempt drunk. Her face battered from alcohol, her body bloated from her husband's drunken rages, she would stand in the corner and scream obscenities over the citizens band radio whenever she was on a binge. She would drink from morning until



Anchorage Daily News/Michael Perry

Justina Kvasnikoff drank heavily while pregnant with Mack Jr. and Nicholas.

See Page A-9, FETAL

# FETAL ALCOHOL



Mack Kvasnikoff, now an alcohol abuse counselor, sits with his 5-year-old son Nicholas in the family kitchen at English Bay.

Continued from Page A-8

Insensibility; she drank so much on the night of Nicholas' birth, in fact, that she passed out in the middle of her contractions.

Justina says she started drinking at 19 to cover her natural shyness. Already the mother of three, she wanted to escape from some of her responsibilities and join in the fun her husband and his friends seemed to be having.

She drank until she blacked out. The next weekend, she did it again. The fun quickly turned into week-long binges and then into months of daily, heavy drinking.

Finally, the Division of Family and Youth Services stepped in. The children were taken away and given to relatives. The Kvasnikoffs were ordered into treatment at the Salvation Army's Cilltheroe Center in Anchorage.

That was the turning point. Both Mack and Justina had

See Page A-10, FETAL

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Mack Xvaanikoff, now an alcohol abuse counselor, sits with his 5-year-old son Nicholas in the family kitchen at English Bay.

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See Page A-10, FETAL

## Voices

What role do schools play in helping or not helping young Natives cope with cultural changes, alcoholism, drug abuse and suicide? Are schools contributing to the problems of young Natives by emphasizing Western ideas and ideals?

— 66 —

We intend to do more as a school. We're expanding the youngsters' experience. We're sending 10 youngsters to the A.F.'s annual convention. We're committed to the sports program. But all of that isn't enough. We can have the greatest programs in the world in school, but still youngsters go home at night and the problem is there — in many of our homes.

— ED GRAHAM  
Principal, Hooper Bay  
High School

— 99 —



## THE ALCOHOL

### Voices

What role do schools  
play in helping or  
not helping young  
Natives cope with  
cultural changes,  
alcoholism, drug  
abuse and suicide?



Continued from Page A-9

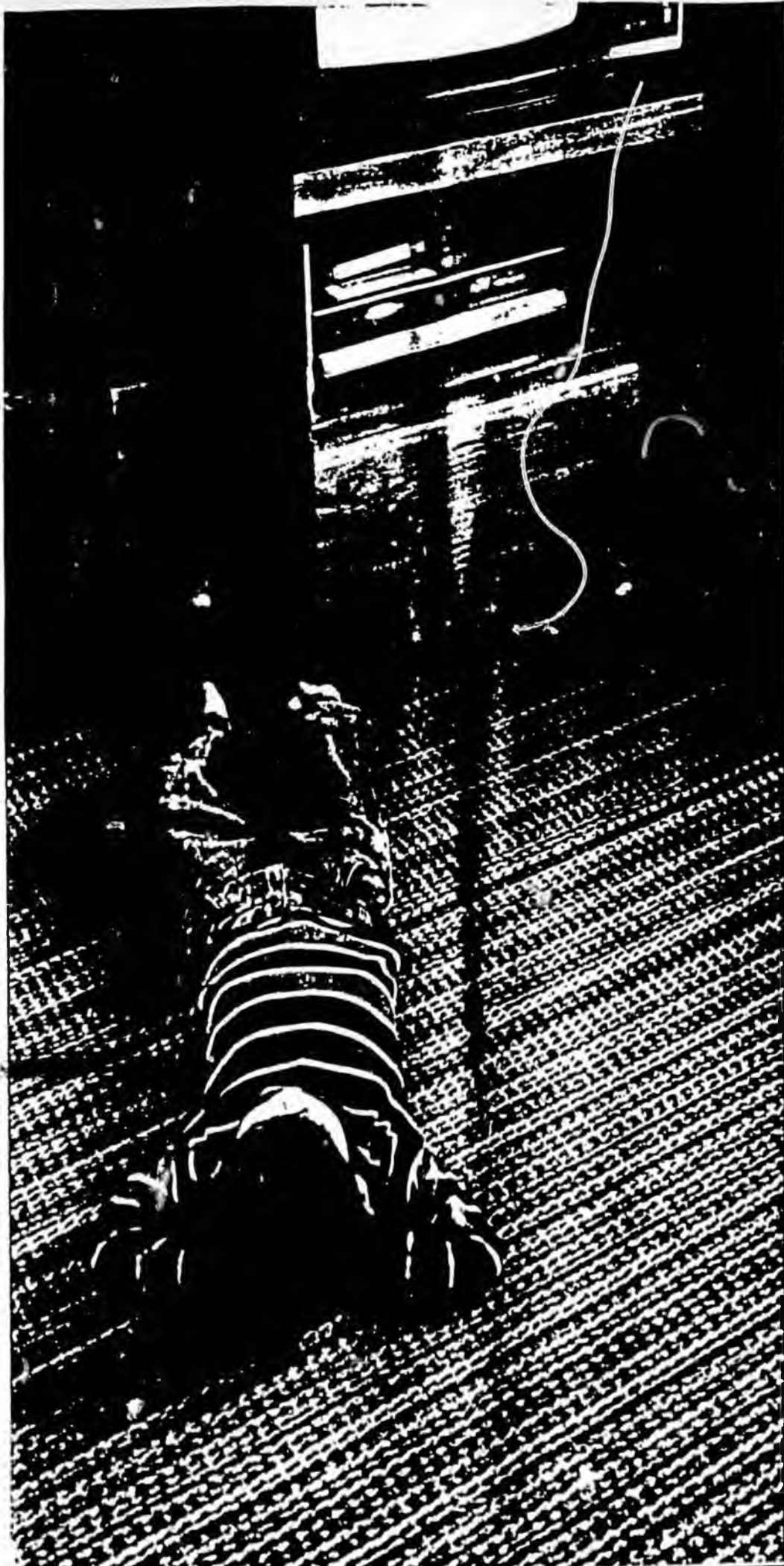
been in court-ordered treatment before, but neither could admit to alcoholism. This time, the message sank in and they began to face what they had done to their lives and their family.

"At first it was hard to accept (that alcohol had damaged the children). Denial was very strong," says Mack Sr. "But it was a mistake that we both made. I'm not letting her suffer alone."

The Kvasnikoffs have been sober for four years. They say part of their healing comes from talking about what happened to them. Mack is now English Bay's drug and alcohol counselor, and Justina talks with her daughters and sons, and their friends, about the dangers of drinking.

They also talk about learning to forgive themselves, although they say it isn't easy. The evidence of 15 years of binges, blackouts and hangovers always will remain on the faces, bodies and minds of their two youngest sons.

"Kids at school told Mack Jr. that he was small and slow because his mother drank while he was in her stomach. He asked me, is that true, Mommy?" Justina's brown eyes fill with tears. Her voice drops to a whisper. "I didn't know what to say. I say, yes, it's true."



#### NO DRINK IS SAFE

No one knows how much alcohol it takes to damage a baby. Researchers so far haven't seen the full-blown syndrome in women who drink less than one fluid ounce of alcohol — the equivalent of two shots of whiskey or two beers — a day. Some women can drink a six-pack a day and produce healthy children.

But as few as two binges, with five drinks or more at a time, can cause birth defects like stunted growth or mild retardation. Because research on the syndrome is just beginning — it was discovered by a Seattle doctor in 1973 — many doctors don't consider even a single drink during a pregnancy to be safe.

Most Native women now know alcohol can hurt their babies and stop drinking as soon as they find out they are pregnant, says Janet Allan, a nurse at the medical center who screens pregnant women for alcohol problems.

"That's what impresses me the most. It's what I call daily heroics," she says. "These women often have the courage to get out of bad situations. (Many) are faced with domestic violence, emotional violence, sexual violence. It's hard to quit when everybody around you is drinking. But some do."

Alaska has few places that pregnant women can go to escape the pressures of abusive, alcoholic families. Care Cottage, a hospice for women with high-risk pregnancies, keeps a few beds for alcoholic mothers, and shelters like Clare House and McKinnell offer some support.

But many of the pregnant women who stay at the shelters last only a few days or weeks, shelter workers say. Then they return to their friends and their families and their drinking. Some women never seek help at all.

"An addicted person who's using heavily sees alcohol as her best friend," Allan says. "Often the women feel guilty, but they continue to use anyway. They are into the denial stage of the disease."

Their denial is fueled when they see other women drink and give birth to seemingly normal children — a not uncommon experience, since fetal alcohol syndrome is not inevitable. Even the heaviest drinker has less than a 50 percent chance of producing a defective child during the first pregnancy.

But once a woman has one child stunted by alcohol, the next babies will be more and more damaged, unless the mother stops drinking, according to researchers. That's why the Native health board urges villages and regional corporations to develop prevention programs, to educate children as early as junior high about the dangers of drinking and to step in with counseling and guidance when women are in danger of producing alcohol-damaged children.

What's at stake, many health care professionals fear, is the future of the Native population as a whole.

"What's going to happen if we keep reproducing children that are so badly affected? How effective are we going to be?" asks Elenore McMullen, a village health aide who runs the fetal alcohol prevention program in Port Graham. "People have to be involved. Or what's the Native population going to be like in the years to come?"

#### CRISIS NUMBERS

Every Alaska with access to a telephone has someone to talk to if they need help. Anchorage, Juneau, Fairbanks, and Anchorage have local crisis lines. And there is a toll-free 800 number that everyone can use.

- Juneau: 666-4387. Answers from 7 p.m. to 11 p.m. At other times, use the 800 number.
- Anchorage: 378-1800. Answers 24 hours a day.
- Fairbanks: 452-4357. Answers 24 hours a day.
- Everywhere in Alaska: 800-478-1800. In some locations, you may have to dial 1-800-478-1800. Answers 24 hours a day.

#### A PEOPLE IN PERIL

Sunday	Alaska's suicide epidemic
Monday	Death & disease throughout state
	Troubled women find partners who stalk
Tuesday	Alcohol and alcoholism 13-year-old pro killer
	A death brings temporary harmony to Seattle
TODAY	Fetal Alcohol Syndrome violates the unborn
Thursday	A sign over of boats in the Bush
	Nurses & effort to restrict the flow of booze
	Public borrows the backfitter's brand
Friday	How the loggers are paid
	A tragedy at St. Mary's
Saturday	A wreath for the preservation of life
	One wet and dry the same community
Sunday	Anchorage is a different kind of village
	Portrait of the Native who live in Anchorage

Ideas For Community Activities  
On The Prevention Of  
Alcohol-Related Birth Defects  
(ARBD)

- \* Make a written contract with pregnant client not to drink during the pregnancy.
- \* Offer pregnant clients a \$100 off their total prenatal and delivery bill if they do not drink during the pregnancy.
- \* Offer pregnant clients a gift, such as an infant safety seat, if they do not drink during the pregnancy.
- \* Work with local taverns and restuarants to offer free non-alcoholic drinks to their pregnant customers.
- \* Work with local school board and teachers to incorporate a class on Alcohol-Related Birth Defects in junior and senior high schools. The class could be incorporated into a child development course, health course, science course.
- \* Work with schools to have special ARBD presentations made in the schools by the health aide, community health representative, public health nurse, or doctor.
- \* Arrange to have ARBD presentations made to the PTA.
- \* At local health fairs, have an ARBD display.
- \* Encourage Native Health Corporations, Indian Health Service and State Alcohol Programs to develop prevention and intervention programs for pregnant women.
- \* Launch an ARBD media campaign, including television, radio and newspapers, in your area.
- \* Contact local childbirth educators (LaMaze Childbirth Association) in hospitals and family planning clinics, and encourage and support their efforts by providing them with information on Alcohol-Related Birth Defects.
- \* Develop a one-hour ARBD presentation targeted to youth that can be presented to youth groups and clubs.
- \* Conduct ARBD presentation to women's groups in your community.
- \* Conduct ARBD presentation to men's groups in your community.
- \* Work with AA to have ARBD presentations made at regular AA meetings, and also at Al-Anon and Al-A-Teen meetings.
- \* Prepare educational display on ARBD for local clinic.
- \* Develop an ARBD prevention network in your own community/area by identifying persons who are interested in working to prevent Alcohol-Related Birth Defects.
- \* Adopt a pregnant woman and be her support person throughout the pregnancy and postpartum period.

RED SNAPPER - 1 serving

- \* 1 teaspoon lime juice
- \* 1 cup V-8 juice
- \* ½ teaspoon Worcestershire sauce
- \* ½ teaspoon salt
- \* dash ground pepper
- \* dash Tabasco

Mix ingredients and serve in a glass half full of ice. Decorate with a slice of lemon and a stick of celery.

NOT SO HIGHBALL - 1 serving

- \* 2 jiggers grape juice
- \* juice of 1 lemon
- \* ½ lime
- \* 1 jigger grenadine
- \* ginger ale to taste

Mix in highball or old-fashion glass filled with ice cubes.

MILD-MANNERED MARGARITA - 1 serving

- \* 1 cup bitter lemon or lime soda
- \* juice of 1 lime
- \* 2 teaspoons sugar
- \* salt to taste
- \* crushed ice

Four soda in ice cube tray and freeze thoroughly. In blender add cubes of soda, lime juice and sugar and blend. Rub lime around rim of glass and dip in salt. Serve over crushed ice in the salted glass.

HOLIDAY HIGHLIGHT - 3 servings

- \* 1 16 oz bottle cranberry juice
- \* 1 pint and 2 ozs. (one can) pineapple juice
- \* lemon slices

Mix pineapple and cranberry juices in a large pitcher. Pour over crushed ice in tall glasses and garnish with lemon slices.

TOPS IN TONIC - 1 serving

- \* ¾ cup quinine water or tonic
- \* ice cubes
- \* lime slices

Pour quinine water or tonic over ice cubes in glass. Squeeze juice from lime slice into drink and then add the slice.

ALASKA SURPRISE - 6 servings

- \* 3 cups apple juice, unsweetened
- \* 3 cups herb tea, cold
- \* ice cubes
- \* lemon wedges

Mix the apple juice and tea together. Put ice cubes in 6 glasses. Pour the juice/tea mixture over the ice and stir slightly. Add a lemon wedge to each glass.

NO NAME

Chilled sparkling cider or mineral water with a twist of lime or lemon.

# **CORRECTION**

**THIS DOCUMENT  
HAS BEEN REPHOTOGRAPHED  
TO ASSURE LEGIBILITY**

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On The Prevention Of  
Alcohol-Related Birth Defects  
(ARBD)

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- \* Adopt a pregnant woman and be her support person throughout the pregnancy and postpartum period.

- \* Work with local government to develop ordinances regarding drinking while pregnant; displaying warning signs at point of purchase.
- \* Set up a support group for pregnant women that would not only provide prenatal, parenting, etc. education, but also social activities.
- \* Work with local stores to do promotional display on non-alcoholic beverages focusing on pregnant women.
- \* Conduct ARBD presentations at prematernal homes.
- \* Encourage your local Medical Association to promote education on ARBD for medical professionals.
- \* Sponsor a poster contest in the schools on the topic of prevention of ARBD.

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- \* 1 cup V-8 juice
- \* ¼ teaspoon Worcestershire sauce
- \* ¼ teaspoon salt
- \* dash ground pepper
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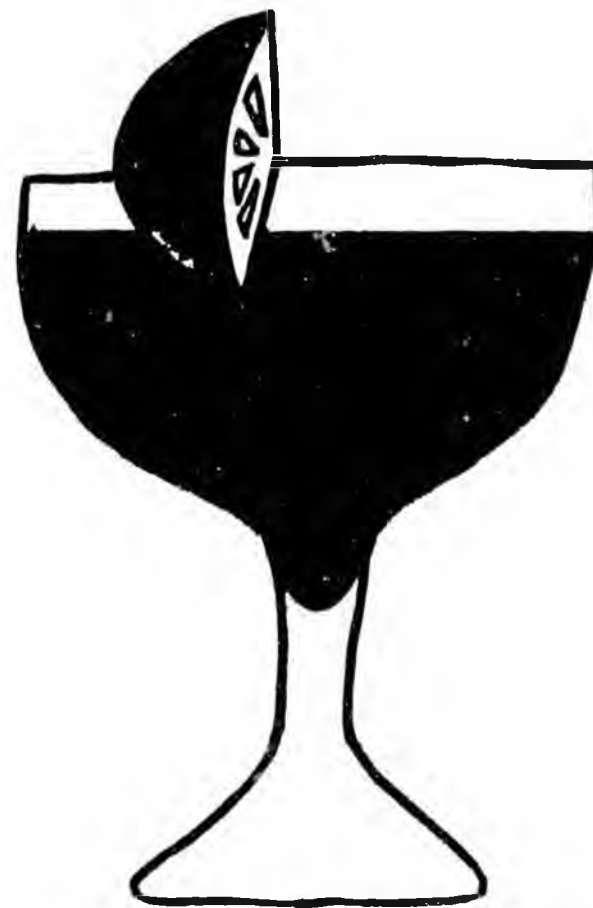
NO NAME

Chilled sparkling cider or mineral water with a twist of lime or lemon.

#### OTHER TIPS FOR NON-ALCOHOLIC DRINKS

- \* Tasty and healthful fruit drinks can be made by combining cranberry, grape, orange, grapefruit, apple or pineapple juice with mixers like soda or ginger ale.
- \* Many mixed drinks can be ordered without alcohol. Margaritas, Pina Coladas, Bloody Mary and fruit Daiquiris.
- \* Non-alcoholic beer is available.
- \* Try these bubbly fruit drinks:

Sparkling Apple Cider  
Sparkling Grape Juice  
White Grape Juice



ALASKA NATIVE HEALTH BOARD  
Alaska Fetal Alcohol Syndrome (FAS)  
Fact Sheet

- \* In 1985, all Alaskans consumed 4.35 gallons of absolute alcohol per capita.
- \* Alaska appears to have one of the highest recorded rates of FAS.
- \* The rate of FAS in Alaskan Natives is conservatively estimated at 4.2/1000 live births.
  - How does this compare?
    - France FAS rate - 1.6/1000 live births
    - Seattle FAS rate - 1.7/1000 live births
    - Navajo FAS rate - 2.0/1000 live births
- \* The rate of FAS in the Alaskan non-Native population is not yet known, but it is expected to also be high.
- \* A conservative estimate of new cases of FAS in Alaska is 10 per year.
- \* In the lower 48 it is estimated that for every child born with FAS, 10 are born with Fetal Alcohol Effects (FAE). FAE describes less severe damage due to alcohol. The extent of FAE in Alaska is not yet known.
- \* In Alaska, the dollar cost to care for one FAS child for his/her lifetime can be up to one million dollars or more.
- \* In Alaska, FAS may be the number one identifiable cause of mental retardation.

Alaska Native Health Court

Fetal Alcohol Syndrome - Cost Estimates  
in Alaska

1. Neonatal Intensive Care \$1,500-\$2,000 per day x 7 days = \$9,100-\$14,000
2. Heart Defects surgical procedures 99% are done outside \$20,000 and up for uncomplicated/non-emergency \$50,000 for and up complicated/emergency
3. Cleft Palate Surgery Usually 4 surgeries, plus dental work and orthodontics = \$50,000 - \$75,000
4. Speech Therapy Initial Diagnostic \$200 2-3 sessions per wk. at \$90-\$135 per wk. x 1 yr. = \$9,300 - \$21,050
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## FACT SHEET: FETAL ALCOHOL SYNDROME (FAS)

compiled by Marcia Michel

### FACTS

Twelve years of research have conclusively established that alcohol use during pregnancy poses a threat to the health of the child. **Fetal Alcohol Syndrome** is a pattern of mental, physical and behavioral defects that may develop in the unborn child when its mother drinks alcohol during pregnancy. FAS is characterized by a cluster of congenital birth defects that include the following:

- Prenatal and postnatal growth deficiency, meaning low birth weight and failure to catch up
- A pattern of facial malformations, including small head size, misshapen eyes and midportion of the face
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- Varying degrees of malformations, particularly of the heart, joints, kidneys and genitalia.

**Fetal Alcohol Effects (FAE)**—less severe alcohol-related birth defects—have shown up in babies whose mothers drank smaller amounts.

According to current research, there is no safe drinking level for pregnant women.

In many cases, high levels of consumption will produce the full expression of FAS; but in some cases, moderate consumption is enough to produce FAS.

Researchers estimate that nationally FAS occurs in about 1 to 3 per 1,000 live births.

In Alaska, preliminary results indicate that FAS occurs in at least 3 per 1,000 live births among the Native population.

FAS has been found in virtually every ethnic and cultural group and in every social class.

For every child with FAS, as many as 10 other children may be born with FAE.

The severity of FAS seems to rise with each succeeding affected child born to a woman drinking alcohol.

FAS is the third leading cause of birth defects with accompanying mental retardation, and is the only preventable one among the top three.

Research shows there is no safe time to drink during pregnancy. The first trimester appears to be the interval when developing organs are vulnerable to damage.

Evidence supports an association between alcohol consumption and an increased incidence of spontaneous abortions found during the second trimester.

Alcohol exposure during the third trimester may interfere with the rapid growth that occurs during this time, including the growth of the brain.

The major effects of alcohol on developing tissues are slowing of growth and interference with cell migration.

Alcohol itself is the toxic agent, but other factors (nutrition, smoking, use of other drugs and other "unknowns") may enhance the effect of alcohol and influence the actual risk for FAS.

Cost of institutionalization for an FAS child in Alaska averages \$90,000 per year. Travel and surgery on birth defects would be additional costs depending on amount and severity.

While all of the defects caused by drinking have not yet been identified, we do know:

- alcohol interferes with normal pregnancy
- effects on the fetus are permanent
- whether they occur or not is a matter of the basic metabolism of both the pregnant woman and the fetus

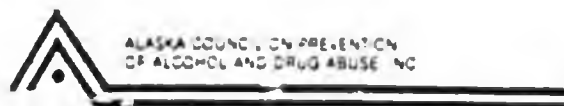
There is no treatment for FAS.

It is totally preventable.

In the absence of research establishing a safe drinking level, the U.S. Surgeon General advises women who are pregnant (or nursing or considering pregnancy) to refrain from drinking alcohol during pregnancy.

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This information was compiled from several sources. For a complete listing of these sources, please contact Marcia at the Alaska Council.



ALASKA NATIVE HEALTH BOARD

FETAL ALCOHOL SYNDROME  
(FAS)  
FACT SHEET

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- \* Criteria for FAS
  1. Prenatal or postnatal growth retardation in height, weight, and/or head circumference.
  2. Altered morphogenesis (abnormalities) especially of the face.
  3. Central nervous system involvement, often with mental retardation.

AND

- 4. There must be a positive history of the mother drinking during the pregnancy.
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  - small head circumference
  - small widely spaced eye openings
  - indistinct or no groove between the nose and upper lip
  - short nose
  - thin upper lip
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- \* FAS children are smaller than normal children in height, weight, and head circumference, usually below the third percentile, and they NEVER "catch up." They remain shorter. They remain thinner even with adequate nutrition. The head is smaller because when the alcohol affected the brain's development, it stopped growing. And when the brain stopped growing, so did the skull. The head remains smaller.
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Babies born to moderate (2 drinks per day) drinking mothers have FAS.

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- \* We all pay in one way or another for every FAS child born.

## memorandum

DATE: February 10, 1988

REPLY TO  
ATTN OF: Chief, Community Health Services Branch  
Alaska Area Native Health Service

Refer to: A-CHSB

SUBJECT: Background Data on Alcohol-related birth defects (ARBD) in Alaska Natives

TO: George Brennehan, MD  
Chief, Maternal/Child Health  
Indian Health Service Headquarters

Pediatricians caring for Alaska Native children have recognized Fetal Alcohol Syndrome (FAS) in Alaska since the mid-1970's. There has been a growing concern that this condition was more frequently seen than the reported incidence in the white population, or other Native American population.

The community Health Services Branch initiated an intensive systematic survey in 1986, in conjunction with the Alaska Native Health Board, to determine the incidence of FAS in the cohort of Alaska Native children born between 1 January 1980, and 1 June 1986. Although an intensive effort to examine all children at risk was made, due to weather, and geographic isolation, case-funding was incomplete for three regions of the State, accounting for approximately 10-15% of Alaska Native births. Since the original study was completed, a State-wide surveillance system has been in effect, utilizing the following elements:

1. Pregnant Alaska Native Women who are at risk for substance abuse are identified by providers. Referral is made to regional Maternal Child Health (MCH) coordinators, and the patient's name and demographic data are entered on an ARBD Registry. Counseling is provided, and referral to substance abuse treatment is offered.
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TO ASSURE LEGIBILITY**

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Alaska Native Health Board

Fetal Alcohol Syndrome - Cost Estimates  
in Alaska

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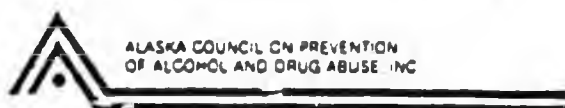
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7521 OLD SEWARD HWY. SUITE A • ANCHORAGE ALASKA 99518

ALASKA NATIVE HEALTH BOARD

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6. Infants found to be affected with ARBD are placed on the Pediatric Chronic Disease Registry, so that appropriate longitudinal services, of all types, can be assured.

At present, no post-partum program exists aimed specifically at those women having substance abuse problems. Such an effort would be a critical part of the program described in the South Central Foundation concept paper.

The results of the ARBD surveillance program, since its inception, are summarized below.

The Alaska Area has about 2600 deliveries annually.

1. For the interval 1 January 1980 to 1 June 1988, the incidence of FAS is 4.3./1000 live births.
2. For the calendar year 1987, 19% of the prenatal patients were identified as "at-risk" from substance abuse, the vast majority being at risk from alcohol.

The Anchorage Service Unit (ASU) ARBD registry, during the calendar year 1986, (the latest year with complete data) showed the following data:

1. 21% of all prenatal patients were entered on the ARBD registry.
2. Considering the ASU ARBD patients as a group, they accounted for 37% of the region's LBW infants. The registry group had an incidence of FAS/FAE of 9.1%; the rate of major congenital anomalies was 9.1%; the infant death rate was 3%; the rate of LBW infants to registry patients was 24.7%.

Over the time period 1 January 1980, to 1 June 1988, 19% of mothers delivering ARBD infants had produced more than one affected infant.

The expenses incurred by infants with ARBD, born during C.Y. 1987, not including costs while at IHS facilities, were \$1,162,500. This was care related to neonatal intensive care, and the surgical correction of major congenital anomalies. The cost of future medical care, of special education, and, for some children, a lifetime of institutional care, is many times this amount.

The loss of human potential is impossible to determine.

The above data underscores the need to deal with substance abuse in early childhood as well as in young women. Many pregnant patients at risk have identified as a barrier, the lack of a treatment program with their particular needs and issues clearly defined. In the Anchorage area, most residential programs are very uncomfortable with pregnant women, and this is readily communicated to the patient. Other programs simply exclude this group.

There is, in the Alaska Area, a demonstrated need for at least one specialized residential substance abuse program aimed specifically at pregnant women and their unique needs.

If I can provide any more information please contact me.

Respectfully,



James E. Berner, MD

cc: G. H. Ivey, A-D  
Osamu Matsutani, MD  
Tessie Ricketts  
William W. Richards, MD  
Vicki Hild  
P. J. Overholtzer  
Russell Mason

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## MEDICAL EVALUATION AND THERAPY OF FAS AND FAE CHILDREN

Among FAS and FAE children, there is considerable variation in the degree and types of anomalies present. Many of the anomalies are associated with functional deficits which may require immediate and long term medical attention. When FAS or FAE children are diagnosed they should be evaluated for these deficits and appropriate medical and rehabilitation services provided. Some of the anomalies, common in FAS and FAE children which will require further medical and or developmental evaluation and treatment are outlined below. This list is not intended to be a complete list of anomalies present in FAS or FAE children, but should provide the health care provider with a direction in evaluating the medical and social needs of these children.

<u>Area of Anomalies:</u>	<u>Evaluate for:</u>	<u>May Require:</u>
- Growth	<ul style="list-style-type: none"> <li>- Failure to thrive</li> <li>- Weak sucking ability</li> <li>- Other feeding dysfunction</li> </ul>	<ul style="list-style-type: none"> <li>- gastronomic or nasogastric feeding in infancy</li> </ul>
- Head and Face		
Eyes	<ul style="list-style-type: none"> <li>- Ptosis</li> <li>- Strabismus</li> <li>- Epicanthic folds</li> <li>- Microphthalmic</li> <li>- Nystagmus</li> <li>- Myopia</li> <li>- Estropia</li> <li>- Abnormal retinal vasculature</li> </ul>	<ul style="list-style-type: none"> <li>- thorough ophthalmologic evaluation, glasses</li> </ul>
Nose	<ul style="list-style-type: none"> <li>- persistent rhinorrhea associated with a small nose and small nasal canals</li> </ul>	
Ears	<ul style="list-style-type: none"> <li>- recurrent otitis media</li> <li>- auditory deficiencies</li> </ul>	<ul style="list-style-type: none"> <li>- hearing aids, thorough hearing evaluation</li> </ul>
Mouth	<ul style="list-style-type: none"> <li>- cleft palate</li> <li>- cleft lip</li> <li>- poorly formed teeth</li> <li>- small trachea. (may cause difficult intubation)</li> </ul>	<ul style="list-style-type: none"> <li>- surgery, orthodontic treatment, speech therapy</li> </ul>
- Body Organs		
Heart	<ul style="list-style-type: none"> <li>- cardiac defects (detected in 70% of diagnosed FAS cases):</li> <li>- septal defects</li> <li>- teratology of fallot</li> <li>- pulmonary valve stenosis</li> <li>- patent ductus arteriosus</li> </ul>	<ul style="list-style-type: none"> <li>- surgery</li> </ul>
Kidney and Urogenital Tract	<ul style="list-style-type: none"> <li>- hydronephrosis (dilation of the kidney, usually due to obstruction of urine flow)</li> <li>- hypoplasia (small kidney)</li> <li>- renal agenesis (absence of one or both kidneys)</li> <li>- obstruction of the Uteropelvic junction</li> </ul>	<ul style="list-style-type: none"> <li>- surgery, management of urinary tract infections</li> </ul>

Medical Evaluation and Therapy of FAS and FAE Children (continued)

<u>Area of Anomalies:</u>	<u>Evaluate for:</u>	<u>May Require:</u>
Liver	<ul style="list-style-type: none"> <li>- prolonged hyperbilirubinemia</li> <li>- abnormal liver functioning</li> </ul>	
Genitals	<ul style="list-style-type: none"> <li>- undescended testicles</li> <li>- hypospadias (abnormal urethral openings)</li> <li>- delay of menarche in girls</li> </ul>	
- Skeletal		
Limb and Joints	<ul style="list-style-type: none"> <li>- limited range of motion of hip, knees, elbows, and other joints</li> <li>- Clubfoot</li> <li>- radioulnar synostosis (fusion of elbow and forearm bones)</li> <li>- Klippel-feil anomaly</li> <li>- scoliosis</li> <li>- reduced skeletal age</li> <li>- shortened fingers</li> <li>- congenital hip dislocation</li> <li>- flexion contracture of the elbow</li> <li>- limited flexion of metacarpal phalangeal joints</li> </ul>	<ul style="list-style-type: none"> <li>- thorough orthopedic evaluation, physical therapy, surgery, occupational ther.</li> </ul>
- CNS		
Brain	<ul style="list-style-type: none"> <li>- mental retardation</li> <li>- learning disorders</li> <li>- microcephaly</li> <li>- seizure activity</li> <li>- cerebral palsy</li> </ul>	<ul style="list-style-type: none"> <li>- IQ testing; educational diagnostic workup; management of behavior disorders, hyperactivity, seizures, etc.; special education; foster placement; complete developmental assessment.</li> </ul>
- Other Behavioral Deficits	<ul style="list-style-type: none"> <li>- delays in gross motor development</li> <li>- poor motor coordination</li> <li>- hyperactivity</li> <li>- poor eye-hand coordination</li> <li>- short attention span</li> <li>- variable social quotient</li> <li>- learning disabilities</li> <li>- school failures and conduct disorders</li> <li>- sleep disturbances</li> <li>- psychopathology</li> </ul>	
- Other CNS Disorders	<ul style="list-style-type: none"> <li>- neural tube defects</li> </ul>	
- Other Health Problems	<ul style="list-style-type: none"> <li>- recurrent infections</li> <li>- immune deficiencies</li> </ul>	<ul style="list-style-type: none"> <li>- special monitoring for high risk recurrent health probl.</li> </ul>
- Home Environment	<ul style="list-style-type: none"> <li>- alcohol abuse</li> <li>- child neglect or abuse</li> <li>- proper nutrition</li> <li>- stimulating environment</li> </ul>	<ul style="list-style-type: none"> <li>- foster placement, pre-school attendance, public aid, family counseling/therapy</li> </ul>

### FAS High Risk Criteria

A woman is considered at risk for having a FAS infant if she reports one of the following:

1. Consuming two or more alcoholic drinks per day or a total of 45 drinks per month, or
2. Binge drinking (consuming five or more alcoholic drinks on any one occasion ranging from twice a week to two or three times a month), or
3. Previously delivered a FAS or FAE infant, or
4. If the patient identifies herself as being at risk because of drinking environment and lack of supportive environment in which to stop drinking during the pregnancy.

ALASKA NATIVE HEALTH BOARD/ALASKA AREA NATIVE HEALTH SERVICE  
FETAL ALCOHOL SYNDROME PREVENTION PROGRAM

GLOSSARY OF TERMS

- ABERRANT -Wandering or deviating from the usual or normal course.
- ACETALDEHYDE -A compound formed by the action of enzyme systems on ethanol when it is metabolized by the body. It is further metabolized to acetic acid.
- ANOMALIES (ANOMALY) -Marked deviation from the standard, especially as a result of congenital or hereditary defects.
- ANTABUSE -The trademark for a preparation of disulfiram used to treat alcoholics. It is thought to interfere with metabolism of acetaldehyde, and its use results in temporary nausea, vomiting, palpitation, and other adverse effects.
- APNEA -Cessation of breathing.
- CAMPTODACTYLY -One or more fingers constantly flexed at one or more joints.
- CLINODACTYLY -Abnormal bending of fingers or toes.
- CORPUS CALLOSUM -An arched mass of white matter found in the longitudinal tissue that separates the two hemispheres of the brain. Transverse fibers connect the two hemispheres.
- CYANOSIS -A bluish discoloration of skin and mucous membranes due to excessive concentration of reduced hemoglobin in the blood.
- CONGENITAL -Existing at, or dating from birth.
- DEFICITS -A lack or deficiency.
- DYSMORPHOLOGY -The study of birth defects or malformation in a species.
- ECCHYMOSES -Blood under the skin--giving the appearance of bruises.
- EMBRYO -The fertilized ovum that eventually becomes the offspring during the period of most rapid development. In humans, this period is from 2 weeks after fertilization until the end of the 7th or 8th week, when it becomes a fetus.

MOTILITY	-The ability to move spontaneously.
NECROPSY	-Examination of a dead body to determine cause of death. Syn. - Autopsy.
NEONATE	-A newborn under 28 days of age.
PALMER CREASE	-Any of the normal grooves across the palm which accommodate flexion of the hand. In certain congenital anomalies, there is only a single transverse crease.
PALPEBRAL FISSURE	-The longitudinal opening between the eyelids.
PARITY	-The number of live births that a woman has delivered.
PERINATAL	The period shortly before and after birth generally considered to begin with completion of 28 weeks of gestation and ending 1 to 4 weeks after birth.
PHILTRUM	-The vertical groove in the middle of the upper lip.
PLACENTA	-An organ surrounding the fetus during pregnancy which joins the mother and offspring and supports growth and development during gestation.
POSTNATAL	-Occuring after birth.
PRENATAL	-Existing or occuring before birth.
PTOSIS	-Drooping of the upper eyelid.
STRABISMUS	-Deviation of the eye which the patient cannot overcome without treatment. The inability of both eyes to focus on one subject.
SYNDACTYLY	-Fingers or toes joined together.
SYNDROME	-A group of symptoms that characterize a disease or pathological entity.
TACHYCARDIA	-Accelerated pulse.
TERATOGEN	-An agent or factor that causes physical defects in the developing embryo.

# **CORRECTION**

**THIS DOCUMENT  
HAS BEEN REPHOTOGRAPHED  
TO ASSURE LEGIBILITY**

Page 4

TOXEMIA

-A metabolic disturbance in pregnancy characterized by hypertension, albuminuria and edema.

TREMULOUSNESS

-Shaking, trembling or quivering.

TRIMESTER

A period of three months into which the nine months of pregnancy can be divided.

VERMILION

-Bright red pigment.

MOTILITY	-The ability to move spontaneously.
NECROPSY	-Examination of a dead body to determine cause of death. Syn. - Autopsy.
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TACHYCARDIA	-Accelerated pulse.
TERATOGEN	-An agent or factor that causes physical defects in the developing embryo.

EPICANTHAL FOLDS	-A vertical fold on either side of the nose, sometimes covering the inner corner of the eye. It is present as a normal characteristic in persons of certain races and sometimes occurs as a congenital anomaly in others.
ETHANOL	-Alcohol; a transparent, colorless, mobile, volatile liquid, $C_2H_5OH$ , obtained by the fermentation of carbohydrates with yeast.
FACIES	-A term used in anatomical nomenclature to designate a) the face; and b) a specific surface of a body structure, part or organ.
FETUS	-The unborn offspring of an animal in the postembryonic period, after major structures have been outlined; in humans, from the 7th or 8th week after fertilization until birth.
GESTATION	-The period of development in animals from the time of fertilization of the ovum until birth.
HEMANGIOMAS	-Benign tumors made up of blood vessels in infancy.
HEMATEMESIS	-The vomiting of blood.
HETEROTOPIAS	-Displacement or misplacement of parts or organs; the presence of a tissue in an abnormal location.
HIRSUTISM	-Abnormal hairiness, especially in women.
HYPOPLASTIC	-Having incomplete development of an organ so that it fails to reach adult size.
HYPVOLEMIA	-Abnormally decreased volume of circulative fluid (plasma) in the body.
LIPIDS	-Fatty substances; insoluble in water, easily stored in the body, serving as a source of fuel and an important constituent of cell structure.
MAXILLARY HYPOPLASIA	-Incomplete development of the bone of the upper jaw.
MICROCEPHALY	-Abnormal smallness of the head, usually associated with mental retardation.

ALASKA NATIVE HEALTH BOARD/ALASKA AREA NATIVE HEALTH SERVICE  
FETAL ALCOHOL SYNDROME PREVENTION PROGRAM

GLOSSARY OF TERMS

ABERRANT	-Wandering or deviating from the usual or normal course.
ACETALDEHYDE	-A compound formed by the action of enzyme systems on ethanol when it is metabolized by the body. It is further metabolized to acetic acid.
ANOMALIES (ANOMALY)	-Marked deviation from the standard, especially as a result of congenital or hereditary defects.
ANTABUSE	-The trademark for a preparation of disulfiram used to treat alcoholics. It is thought to interfere with metabolism of acetaldehyde, and its use results in temporary nausea, vomiting, palpitation, and other adverse effects.
APNEA	-Cessation of breathing.
CAMPTODACTYLY	-One or more fingers constantly flexed at one or more joints.
CLINODACTYLY	-Abnormal bending of fingers or toes.
CORPUS CALLOSUM	-An arched mass of white matter found in the longitudinal tissue that separates the two hemispheres of the brain. Transverse fibers connect the two hemispheres.
CYANOSIS	-A bluish discoloration of skin and mucous membranes due to excessive concentration of reduced hemoglobin in the blood.
CONGENITAL	-Existing at, or dating from birth.
DEFICITS	-A lack or deficiency.
DYSMORPHOLOGY	-The study of birth defects or malformation in a species.
ECCHYMOSES	-Blood under the skin--giving the appearance of bruises.
EMBRYO	-The fertilized ovum that eventually becomes the offspring during the period of most rapid development. In humans, this period is from 2 weeks after fertilization until the end of the 7th or 8th week, then it becomes a fetus.

FETAL ALCOHOL SYNDROME

NEWS ARTICLES

1980 - 1986

# Alaska Native Health Board

1108 3rd Avenue, Suite 200 Anchorage, Alaska 99501

October 13, 1986

RECEIVED  
OFFICE OF THE HEALTH  
ALASKA NATIVE HEALTH BOARD

OCT 16 1986

Vicki A. Hild  
Alaska Area Native  
Health Service  
A-CHSB  
P.O. Box 7-741  
Anchorage, Alaska 99510

Dear FAS Networking Members:

Just a brief update. On September 29th I assumed the position of statewide FAS Coordinator with the Alaska Native Health Board and the Alaska Area Native Health Service. I feel it will be an exciting and challenging position that will enhance our FAS prevention efforts. I will be in contact with most members on specifics. My mailing address will remain the same. The new telephone number is 257-1709.

The North Pacific Rim's FAS Program, which started as a pilot project, will continue with emphasis on prenatal clinics at the Alaska Native Medical Center and on community education in their villages. Also, the Copper River Native Association has submitted a proposal for a FAS prevention program.

Results from the FAS diagnostic clinics held this past year throughout Alaska revealed a FAS rate for Alaskan Natives of 4.1/1000 live births. This is a conservative rate as some FAS children were unable to attend these clinics.

How does this rate compare? The rate of FAS in France and Sweden is 1.4/1000 live births, in the contiguous 48 states the rate is 1.7/1000 live births, and in Navajo the rate is 2.0/1000 live births.

For those who may not have heard about the case in California on Fetal Abuse, I have enclosed a copy of a newspaper article. Another interesting update is regarding the case in Canada where a woman who had given birth to a FAS infant was charged with child abuse -- she was found guilty.

Until the next update.

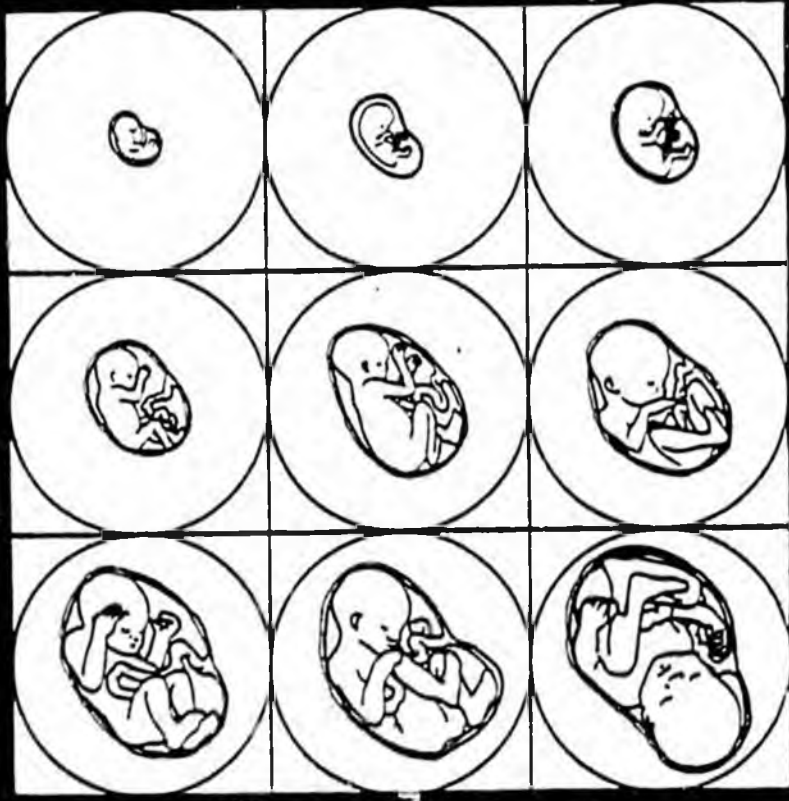
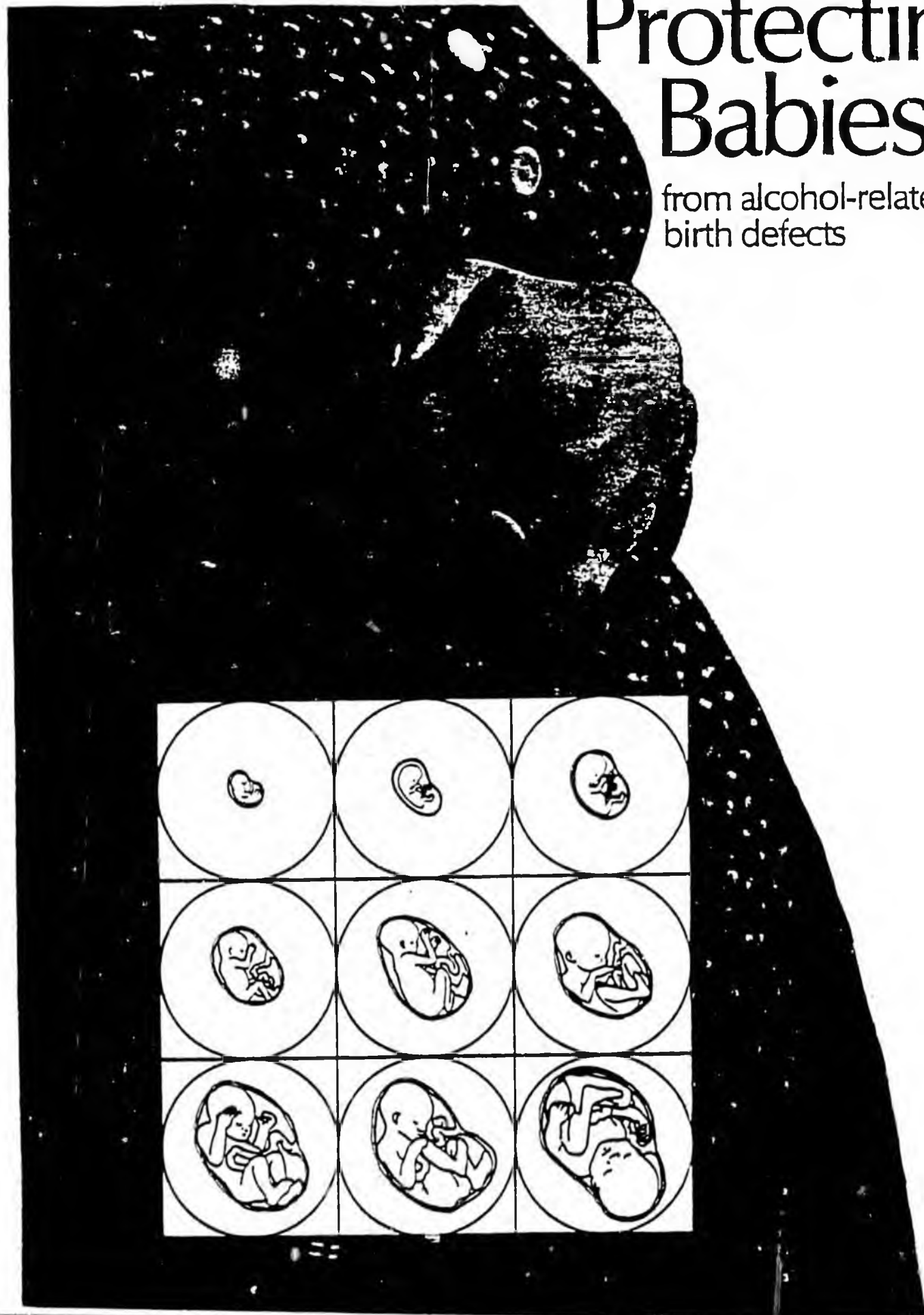
Sincerely,



Vicki A. Hild, M.S.P.H.  
FAS Coordinator

# Protecting Babies

from alcohol-related birth defects



Expectant mothers who drink during their pregnancy may cause irreparable harm to their frail, delicate unborn babies. A major effort to reduce alcohol-related birth defects is under way in California.

Individuals and organizations concerned with the problem are active on a variety of fronts. Among their strategies

- Urging city and county governments to require that birth defect warning posters be displayed wherever alcoholic beverages are sold.

- Supporting state and federal legislation mandating that birth defect warnings be included on the labels of alcoholic beverages.

- Training medical practitioners to recognize symptoms of alcohol and drug abuse in women of child-bearing age so they can be referred to appropriate treatment.

- Making FAS an element in pre-natal counseling, with emphasis on educating fathers as well as mothers about the risks of alcohol and drug use during pregnancy.

- Creating new school curriculum materials for early education about the risks of using drugs or alcohol during pregnancy. As yet, barely five percent of California school districts include prevention of birth defects in their health classes.

- Improving programs for diagnosis of alcohol-related birth defects so that children with this disability may receive treatment that will help them develop to their full potential.

- Expanding research to determine exactly how a developing fetus is affected by the mother's alcohol and drug use, and to develop better modes of care for victims of alcohol and drug related birth defects.

Preventing birth defects associated with alcohol use was the subject of a national conference held in San Diego in 1986, sponsored by the Program on Alcohol Issues of the UCSD Extension. Research and treatment specialists from 15 states and Canada attended the conference, adopting a series of recommendations for new measures aimed at increasing public awareness of the danger of drinking during pregnancy.

Dr. Gladden Elliott, president of the California Medical Association, told the conference that new knowledge is dispelling the notion that Fetal Alcohol Syndrome is relatively rare.

"We now know that the syndrome affects from one to 11 of every 1,000 births," he said. "For those women who have a drinking problem, it may strike as many as 29 infants per 1,000 births. This means that every year physicians are treating between 3,600 and 6,000 babies with fetal alcohol syndrome. And an additional 36,000 newborns each year show some signs of less severe alcohol-related birth defects."

More research is needed to determine what proportion of the 10,000 to 12,000 infants born each year with birth defects or developmental disorders are the victims of Fetal Alcohol Syndrome (FAS) or Fetal Alcohol Effects (FAE).

Fetal Alcohol Syndrome is the most severe of these conditions and is associated with alcohol abuse or dependence by the mother, especially in the early weeks of pregnancy. FAS babies have decreased weight and head size, various degrees of mental retardation, and physical abnormalities most evident in facial features. The less severe Fetal Alcohol Effects are associated with drinking at any stage of pregnancy and include low birth weight, spontaneous abortion and some partial aspects of the Fetal Alcohol Syndrome.

The costs associated with Fetal Alcohol Syndrome are staggering. The direct costs of caring for affected children in the United States are estimated to be at least \$2 billion a year. Institutional care for a severely retarded FAS child may run to \$65,000 a year, or \$2.5 million over its potential lifetime. In terms of human suffering, of course, the cost is incalculable.

A new study reported late last year in the British medical journal *Lancet* identifies Fetal Alcohol Syndrome as the leading cause of mental retardation in infants — ranking ahead of Down syndrome and spinal bifida. Alcohol use is the one cause of birth defects that is completely preventable.

Research has to establish exactly what mechanism is involved in causing harm to a developing fetus when the

mother drinks. There is no known "safe" amount of alcohol that an expectant mother can drink, nor a period in her pregnancy that might be considered safe for drinking. Therefore pregnant women are urged to abstain altogether from alcohol when they are trying to conceive and throughout their pregnancy.

Programs to combat alcohol-related birth defects are being waged by public health agencies and medical organizations along with such private organizations as the March of Dimes Birth Defects Foundation and Healthy Mothers, Healthy Babies.

A special effort is being made to reach teen-agers with information about FAS and FAE. Dr. Mary Lu Hickman, a medical consultant to the state Department of Developmental Services, points out that one out of 10 girls will give birth before the age of 18.

"Teen-age mothers often don't realize they are pregnant until maybe the second or third month," says Hickman. "By that time, if they have had drinking episodes, the damage of FAS probably has already occurred. Major brain and organ systems are laid down by the eighth or ninth week."

Dr. Hickman chairs the California Prevention Task Force on developmental disabilities which is developing a plan called "Prevention 1990." The plan, she told the UCSD conference, will have a strong component dealing with both the prevention and treatment of alcohol related birth defects.

The most important element of the plan is to get birth defects into the educational curricula," she said. "We want all students to have awareness and knowledge of the lifestyle necessary to prevent birth defects, including FAS and FAE."

She said the key to effective education about the risks of drinking and smoking during pregnancy must begin at an early age. "We feel very strongly that the knowledge needed to make a decision whether to drink or smoke should be given at least by grades three and four if it is going to be effective."

Future mothers and fathers are not the only target of education programs aimed at reducing alcohol-related birth defects. The California Medical Association recently inaugurated a

Chemical Dependency Education Program for physicians which hopes to improve their ability to detect drug and alcohol abuse in their patients and refer them to appropriate treatment.

Recognition of chemical dependency symptoms is especially important for obstetricians, who are in a position to help expectant mothers obtain counseling and treatment for alcoholism and other drug abuse which could jeopardize their unborn babies.

The CMA is also an ally of other organizations which are lobbying in Sacramento and Washington on behalf of legislation that would help inform the public about the link between alcohol and birth defects. Lawmakers at both the state and federal level are being urged to pass bills that would require warning labels on alcoholic beverage containers, and warning messages in advertising for the beverages.

State Sen. Gary Hart of Santa Barbara is sponsoring a 1987 version of a labeling bill that was effectively blocked in 1986 by heavy lobbying by the beverage industry. A coalition of organizations concerned about public health and child welfare is working on behalf of the legislation under the leadership of Consumers Union.

In Washington, the Center for Science in the Public Interest has been campaigning on behalf of federal legislation that would require a health warning label on alcoholic beverages.

The most successful battles on behalf of health warnings have been fought in local communities. More and more city and county governments are requiring that posters warning of the risk of birth defects from drinking alcohol be posted in all establishments where alcoholic beverages are sold.

Both the Los Angeles City Council and the Los Angeles County Board of Supervisors have adopted ordinances requiring such warning posters. (See accompanying article about how concerned individuals and groups in Los Angeles worked on behalf of the new regulations.)

In San Diego County, the Board of Supervisors voted favorably on a warning poster ordinance in October, 1986, and planned to lay down a procedure for implementing it in unincorporated areas of the county early in 1987.

"There is very little doubt at all that drinking alcohol in any form during pregnancy can cause birth defects," said Supervisor Susan Golding, who sponsored the San Diego County ordinance. Another supervisor, Brian Bilbray, said he

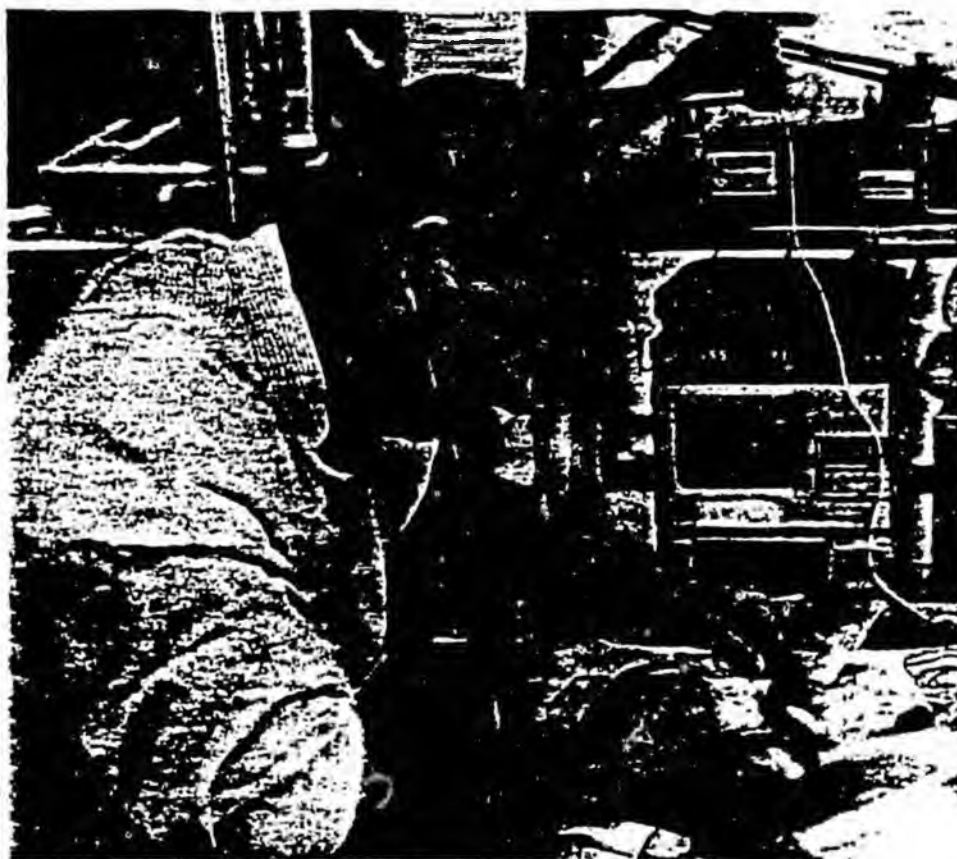


Photo by March of Dimes Birth Defects Foundation

*Birth defects associated with alcohol use during pregnancy may affect as many as 6,000 babies born in the United States every year. A new study ranks alcohol abuse by the mother as the leading cause of mental retardation in America.*

was not impressed by the argument of opponents that it was up to doctors, not sellers of beverages, to warn women about alcohol and birth defects. Representatives of the restaurant and grocery industries opposed the ordinance.

"Maybe in your neighborhood you have pregnant ladies going to their physicians," Bilbray told the opponents. "A lot of my constituents never see a physician until they're ready to deliver."

The San Diego ordinance was supported by the March of Dimes Birth Defects Foundation, the National Council on Alcoholism and other public and private agencies concerned with maternal care, child welfare and prevention and treatment of alcohol and drug problems.

As proposed by Supervisor Golding, the San Diego posters would carry this message: "Warning. Pregnancy and alcohol do not mix. Drinking beer, wine or liquor while you are a pregnant or nursing mother—even in moderate quantities—can be harmful to your baby."

Georgia and South Dakota are now requiring warning signs statewide. Other cities which require the warnings include New York; Philadelphia; Washington, D.C.; Jacksonville and Lakewood, Florida;

and Columbus and Lakewood, Ohio.

The Oklahoma Health Department has been circulating posters to liquor-serving establishment and asking that they be displayed voluntarily. A proposal still under consideration in Wisconsin would require that a pamphlet about Fetal Alcohol Syndrome be handed to all persons applying for marriage licenses in that state.

In most cases where posters are required, the warning deals only with the risk of birth defects. One community goes further, however. In Leesburg, Florida, the posters carry this message:

"Warning: Alcohol in Beer, Wine, and Liquor can cause intoxication, addiction, birth defects. Reduce your risk: do not drink before driving or operating machinery; do not mix alcohol with other drugs (it can be fatal); do not drink during pregnancy."

In Los Angeles, the California Restaurant Association filed a lawsuit challenging the constitutionality of the city's warning poster ordinance. However, a Superior Court judge rejected the argument that the ordinance infringes on the state's powers to regulate the sale of alcoholic beverages.

## Warning Posters

### -Persistence Pays Off in Los Angeles

Adoption of warning poster ordinances by the Los Angeles City Council and the Los Angeles County Board of Supervisors is a textbook example of how community concern about an alcohol problem can be translated into action by local governing bodies.

The successful campaign was guided by a Task Force organized by the Alcohol and Drug Dependency Council of Los Angeles County, which is the local affiliate of the National Council on Alcoholism.

The choice of leaders for the campaign showed an awareness of political realities. Co-chairing the Task Force were Mary Louise Frawley, who has the credentials of a conservative Republican, and Elizabeth Snyder, a prominent Democrat.

"Between the two of us, we had things pretty well covered," says Frawley. "There's a Democratic majority on the City Council, and a Republican majority on the Board of Supervisors."

The two chairpersons assembled a Task Force representing a dozen health and welfare organizations with a special interest in protecting mothers and children from the risk of alcohol-related birth defects. Members of the Task Force in turn reached out to other organizations that might be persuaded to join in the campaign. Eventually more than 35 public and private agencies were lending their names and influence to the effort. Frawley says the Task Force found valuable tips in a booklet on how to get local alcohol warning legislation passed, available from the Center for Science in the Public Interest, 1501 16th St. NW, Washington, D.C. 20036.

The Task Force lined up medical experts on the Fetal Alcohol Syndrome and Fetal Alcohol Effects to testify before the City Council's Health Committee about the importance of informing the public about the risks of drinking during pregnancy. By strategic timing, the Health Committee hearing was held during an observance of "Alcohol Awareness Week" in Los Angeles.

A favorable report by the Health Committee was followed by adoption of the warning poster ordinance by the full 15-member City Council. "We were surprised at the lack of opposition," says Frawley. "I think the beverage industry people were caught off guard."

This was not the case when the Task Force took the issue to the Board of Supervisors, seeking a similar ordinance to apply to the unincorporated areas of Los Angeles County. This time,

representatives of the beverage and service industries were on hand to argue against the ordinance. The FAS Task Force made sure that its side was well represented, too.

"We had a fine turnout of our people for the county hearing," Frawley says. "We wanted to make sure the supervisors knew how many of us were in the audience, so we all wore 'Fight Birth Defects' ribbons."

The main argument made against the proposed ordinance was that it was unconstitutional — that only the state government was empowered to make regulations affecting the sale of alcoholic beverages. Legal scholars at the Prevention Research Center in Berkeley helped provide ammunition for an effective counter-argument in the presentation to the supervisors.

The supervisors adopted the ordinance. Warning posters now are required in 7,500 establishments selling alcoholic beverages in the city of Los Angeles, and in another 1,500 similar businesses in unincorporated areas of the county. Volunteers from the Task Force have been assisting city and county authorities in distributing posters to the affected businesses. Members of the Task force also hope to persuade other municipalities in the Los Angeles area to adopt similar ordinances.

In drafting a proposed text for the warning signs, the Los Angeles Task Force profited by the experience of others. In New York, similar warning posters refer only to the risk of birth defects from drinking "alcoholic beverages" during pregnancy. Surveys have indicated that some people believe the message refers to distilled spirits, but not to beer and wine. The Los Angeles posters state specifically that the risk lies in drinking "beer, wine and other alcoholic beverages."

What's the secret of a successful community effort to pass a warning sign ordinance? "Persistence," says Mary Louise Frawley.

"Liz and I spent a lot of time on the telephone, keeping after people to remind them of what we were doing and getting them to follow through on their promises to write letters or call a councilman or supervisor."

She had another tip for organizers of such campaigns. "We kept it as informal as possible. We tried not to have too many meetings. People shy away from commitments that mean sitting through a lot of dull meetings. Whenever you can, use the phone."

# Fetal Alcohol Syndrome

Kenneth L. Jones, MD\*

The fetal alcohol syndrome is a specific pattern of altered growth, structure, and function seen in the offspring of alcoholic women who drink heavily throughout pregnancy. Since the initial delineation of this condition in 1973,<sup>1,2</sup> it has become clear that prenatal alcohol exposure can be associated with a wide spectrum of abnormalities including otherwise normal children with learning disorders, more severely affected children who manifest prenatal onset growth deficiency, mental retardation, and typical facies, and spontaneous abortion, the most severe effect that alcohol can impose on the developing fetus.

## HISTORICAL PERSPECTIVES

Despite the fact that we in the 20th century have not until recently been aware that alcohol could be detrimental to the unborn baby, ample historical evidence is available indicating that an association between maternal alcoholism and serious problems in the offspring is not a new observation. In the Old Testament, an angel admonished Samson's mother: "Behold, thou shalt conceive, and bear a son; and now drink no wine or strong drink . . ." (Judges 13:7). Evidence is available from classical Greek and Roman mythology suggesting that maternal alcoholism at the time of conception can lead to serious problems in fetal development. This led to an ancient Carthaginian ritual forbidding the drinking of wine by the bridal couple on their wedding night in order that defective children might not be conceived. More recently, an 1834 report to the British House of Commons indicated that infants born to alcoholic mothers sometimes had a "starved, shriveled, and imperfect look." In 1900, Sullivan investigated female alcoholics at the Liverpool Prison. He was able to document an increased frequency of early fetal death and early infant mortality in their offspring.

\* Associate Professor, Department of Pediatrics, University of California San Diego, La Jolla, CA

## INCIDENCES

Because we are not yet fully aware of the total spectrum of abnormalities associated with prenatal alcohol exposure, the incidence of this disorder in the general population is unclear.

In a study published by Olegard et al<sup>3</sup> from Goteborg, Sweden, the incidence of the full-blown fetal alcohol syndrome was estimated to be 1 in 600 live births. However, they estimated the rate of 1 in 300 when infants with partial or more mild manifestations of the syndrome were included.

In the United States, it has been suggested that the fetal alcohol syndrome is the third most common recognizable cause of mental retardation with an estimated incidence of 1 to 2 per 1,000 live births.<sup>4</sup> However, in areas where the incidence of alcoholism is high in reproductive-age women, the incidence of this disorder is clearly much higher.

## PATTERN OF MALFORMATION

The principal features of the fetal alcohol syndrome are given in the Table, are illustrated in Fig 1 through 3, and are further outlined below. It is important to emphasize that alcohol, like other teratogens, produces a spectrum of defects and that affected children may show great variability. One finds every gradation from the full-blown fetal alcohol syndrome to much milder effects of alcohol referred to as fetal alcohol effects.

Birth length, weight, and head circumference are decreased approximately 2 SD to 3 SD below the mean for gestational age. With advancing age, linear growth remains delayed, weight becomes more retarded than length, and head circumference is most severely affected.

Clearly of greatest importance is the effect that prenatal exposure to alcohol can have on brain development. Although the average IQ is 63, recognition of large numbers of patients indicates a wide spectrum of developmental outcomes ranging from children with profound mental

## EDUCATIONAL OBJECTIVES

1. Appropriate familiarity with the characteristics of the neonate whose mother has consumed alcohol throughout pregnancy (Recent Advances, 86/87).
4. The pediatrician should be able to develop an appropriate evaluation of a small-for-gestational age newborn infant, with ability to differentiate among maternal toxemia, placental insufficiency, chromosome abnormality, intrauterine infection due to cytomegalovirus, maternal malnutrition, fetal alcohol syndrome, maternal heroin addiction, maternal smoking, or dysplastic causes, and develop an appropriate plan for management (Topics, 86/87).

retardation and cerebral palsy to those with normal intelligence who manifest learning disorders and other behavioral aberrations.

Of particular importance in the immediate newborn period is the occurrence of neonatal withdrawal symptoms. Although not as common or as severe as can occur in babies born to mothers addicted to heroin or methadone, neonatal ethanol withdrawal is manifested primarily by jitteriness, irritability, and hyperactivity and usually has its onset within 12 hours of birth.

Characteristic neuropathologic features, including multiple heterotopias resulting from alterations in neuronal migration, have been demonstrated in the brains of some affected children.<sup>5</sup> Although noted in extremely small numbers, meningomyelocele and hydrocephalus have also been seen.

The typical facial features which to a great extent permit clinical recognition of the fetal alcohol syndrome are at least partially a function of the effect of alcohol on early brain development. For example, the short palpebral fissures are most likely the result of deficient eye formation. The optic vesicles develop as evagina-

pend on fetal activity for their development. In situations in which fetal activity and thus intrauterine joint mobility is decreased, contracture of a variety of joints may occur (Table). Similarly, palmar crease patterns, also dependent on movement of the hands for their normal development, are altered secondary to the effect of alcohol on early development of the brain.

In a study published by Smith et al.,<sup>7</sup> radiographic evidence of cervical spine fusion and tapering of the terminal phalanges occurred in 43% and 72% of cases, respectively. The fusion of the cervical spines could be demonstrated only after 1 year of age. The frequency of renal defects is unclear. Results of systematically performed intravenous pyelograms in 19 affected children indicated that two had ureteropelvic obstruction, one had a neurogenic bladder secondary to meningomyelocele, and one had malrotation of one kidney which suggests that renal ultrasound is warranted in the evaluation of children with the fetal alcohol syndrome.

## RISKS TO THE FETUS OF ALCOHOL EXPOSURE

### Chronic Maternal Alcoholism

The incidence of adverse pregnancy outcome in the offspring of alcoholic women who continue to drink heavily throughout pregnancy ranges from 30% to 50%. This is based on a number of both prospective and retrospective studies. Perhaps of greatest significance is a prospective study from Goteborg, Sweden, published by Olegard et al.<sup>3</sup> Twenty-eight alcoholic pregnant women were ascertained and counseled early in their pregnancy regarding the deleterious effects of alcohol on the unborn. Five elected to have a therapeutic abortion. Two additional infants died during labor, one at 29 weeks of gestation of unknown cause and the other at 40 weeks from acute abruption of the placenta. Of the remaining 21 women, seven gave birth to normal babies, seven gave birth to babies with the fetal alcohol syndrome, and seven gave birth to babies with what was interpreted as

the prenatal effects of alcohol but not the full-blown fetal alcohol syndrome.

The extent to which therapy for heavy drinking during pregnancy might improve pregnancy outcome has not been determined conclusively. The author has seen the full-blown fetal alcohol syndrome in some children whose alcoholic mothers drank heavily throughout the first trimester, yet totally abstained throughout the remainder of pregnancy. However, Rosett et al.<sup>9</sup> have shown that different degrees of alcohol reduction during pregnancy, ranging from moderate to complete abstinence, seem to improve pregnancy outcome.

Finally, in a study by Little et al.<sup>9</sup> of women who reported total abstinence during pregnancy but who had a history of alcoholism prior to conception, the mean birth weight of study infants was 258 g less than that of study infants. This raises concern that a history of maternal alcoholism may be associated with intrauterine growth retardation independent of alcohol use during pregnancy. Intellectual performance was not evaluated in those children.

### Moderate Alcohol Consumption

In a study by Hanson et al.,<sup>10</sup> 11% of babies born to moderately drinking mothers had evidence of the prenatal effect of alcohol. For the purpose of that study, moderate drinking was defined as 30 to 60 mL (1 to 2 fl oz) of absolute alcohol per day in the month preceding pregnancy. It was believed by the authors of that paper that the month preceding pregnancy actually referred to the first few weeks after conception. The 30 to 60 mL (1 to 2 fl oz) of absolute alcohol translates into approximately 60 to 120 mL (2 to 4 fl oz) of whiskey, two to four glasses of wine, or two to four cans of beer.

### Lesser Amounts of Alcohol

The extent to which lesser amounts of alcohol at various times during pregnancy lead to problems in fetal development is not known. However, the full-blown fetal alcohol syndrome has not been seen in babies born to women who drink less

than 30 mL (1 fl oz) of absolute alcohol per day. Pregnancy outcome associated with lesser amounts of alcohol becomes particularly difficult to study because it is quite possible that some of the more mild effects of prenatal alcohol exposure might not become obvious until the child enters the first grade in school. However, when referring to heavy and moderate alcohol consumption, it is clear that not all infants prenatally exposed to the same amount of alcohol will be affected to the same extent. It would, therefore, seem naive to consider that there exists a "safe" amount of alcohol for all pregnant women. What may be a "safe" amount for most women might well be devastating for another woman's unborn baby. Therefore, it is the author's belief that total abstinence from alcohol is the best policy throughout pregnancy.

## NATURAL HISTORY

A follow-up evaluation of the original 11 children with the fetal alcohol syndrome, 10 years following initial diagnosis, demonstrates the long-term effects prenatal exposure to alcohol can have on the developing fetus.<sup>11</sup> One of the children was lost to follow-up and two are now dead; one died in the newborn period following multiple apneic episodes and the other drowned in the bath tub at 3½ years of age. Of the remaining eight, all continue to be growth deficient, dysmorphic, and mentally delayed. Medical findings that have become particularly significant with time include dental malalignment and malocclusions, eustachian tube dysfunction, and myopia. In fact, in five of the children a class III malocclusion developed, and dental malalignments were seen in all patients. Chronic otitis media, probably secondary to eustachian tube dysfunction associated with maxillary hypoplasia, required medical and surgical procedures in four children, three of whom have suffered permanent conductive hearing loss. Esotropia and/or myopia were noted in four children, and two had optic nerve hypoplasia. Cardiac anomalies, initially believed to be present in all eight of the surviving children, all resolved spontaneously or were considered to be insignificant. It

nificantly decrease the incidence of birth defects

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EDUCATIONAL OBJECTIVE

16. Appropriate familiarity with the advantages and risks of long term acyclovir administration in prophylaxis of recurrent genital herpes (Recent Advances, 86/87).

Advantages and Risks of Prophylaxis for Herpes

Suppression of Frequently Recurring Genital Herpes. Straus SE, et al. *N Engl J Med* 1984; 310:1545

Resistance to Antiviral Drugs of Herpes Simplex Virus (HSV) Treated With Acyclovir. Crumacker CS, et al. *N Engl J Med* 1982; 306:343

Risk of Recurrences After First Episode of Genital Herpes. Reeves WC, et al. *N Engl J Med* 1981; 305:315

Of primary herpes simplex virus type 2 infections, 60% recur, and the recurrences are clinically significant in most patients. Recurrent herpes simplex virus infections can be reduced in frequency by the use of a regimen of daily acyclovir. In a study by Straus et al, the recurrence rate during a 4-month period was 4/16 in patients receiving acyclovir and 16/16 in patients receiving placebo. Unfortunately, the infections recurred in all patients after acyclovir therapy was discontinued. Acyclovir was well tolerated but drug-resistant virus was isolated during therapy.

Crumacker et al isolated a resistant herpes simplex virus mutant after multiple courses of acyclovir therapy in an immunoincompetent child. The clinical significance of this finding was not determinable.

**Comment:** Acyclovir treatment for herpes simplex virus-2 recurrences in patients with a high frequency of recurrence (ten to 15 recurrences per year) is unquestionably effective during therapy but does not alter the natural history of disease. In addition, the authors remain concerned about possible long-term consequences of continuous treatment with a drug that may affect, however minimally, normal host-cell metabolism [and] the potential for inadvertent use early in pregnancy. . . . They conclude that acyclovir therapy . . . is best reserved for reliable patients who have well-established patterns of frequent or complicated herpetic recurrences, and the treatment should be of limited duration. . . . therapy should be interrupted occasionally to determine whether the patient continues to have frequent recurrences" (RHR)

EDUCATIONAL OBJECTIVE

91. Appropriate familiarity with the picture of hyponatremia and failure to thrive in the infant with ileostomy or other gastrointestinal diversions (Recent Advances, 86/87).

Hyponatremia

Sodium Needs of Infants and Children With Ileostomy. Schwarz KB, Ternberg JL, Bell MJ, et al. *J Pediatr* 1983; 102:509

This group studied seven infants with abdominal ileostomies and three with a Soave ileoendorectal pull-through. They showed that, although the initial very high sodium losses spontaneously lessened in ten days, the obligatory losses, however, continued to be high enough so that, when the minimum sodium intake for a healthy infant was given, there was maximum aldosterone secretion, reducing urine losses. Despite the compensation, at such intake levels hyponatremia resulted from the high stool output of sodium. The patients did well when a sodium chloride supplement double the usual intake for a normal infant was given.

**Comment:** In any situation in which there is an obligate increase in sodium (and chloride) losses, eg, cystic fibrosis, vigorous sweating, or intestinal diversion, allowance must be specifically made for an increase in dietary sodium chloride. When there is intestinal diversion, deficiency of vitamin B<sub>12</sub> should also be prevented by supplementation (L Finber, SUNY Downstate)

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The Spectrum of Fetal Abuse in Pregnant Women

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Physical assault by a woman or her partner upon their unborn child has received minimal attention in the psychiatric or obstetric literature. The spectrum concept facilitates the application of knowledge about one type of fetal abuse (e.g., physical assault in response to fetal movements) to other types (e.g., neglect or failure to protect the fetus from chemical assault by alcohol, nicotine, or drugs). Three illustrative case histories are presented, including two cases of assault by the mother via the anterior abdominal wall. Fetal abuse may be one antecedent of child abuse, and this paper attempts to transpose the known correlates of child abuse into an antenatal time framework. The resultant preliminary etiological model also draws upon research findings from neonaticide, the psychology of pregnancy, and the psychology of aggression. In addition, recent research on the maternal-paternal-fetal triad is reviewed in an attempt to delineate under what circumstances ambivalence in the parental-fetal relationship may find expression as fetal abuse. The characteristics of individuals most at risk of perpetrating fetal abuse are outlined.

The term "fetal abuse" is used here to encompass a range of behaviors in pregnant women (or their partners) which are characterized by the nonaccidental performance of some act which the individual knows is potentially detrimental to fetal well-being. Such a spectrum of behaviors could be considered to extend from direct physical assault on the fetus (either through the anterior abdominal wall or per vaginam) to a failure to protect the fetus from "chemical" assault with alcohol, nicotine, or drugs. In the field of child abuse, a similar spectrum is recognized, ranging from physical assault to neglect or failure to protect.

Behaviors, including therapeutic or self-induced abortion, the prime, conscious objective of which is termination of the pregnancy, are excluded from the present framework. It is the author's impression that such behaviors tend to occur in early pregnancy (sometimes even before the pregnancy has been confirmed) and are directed at the *state per se*. The present paper focuses on behaviors more often occurring in late pregnancy, which are aimed at the *fetus itself* without a conscious intention to achieve abortion. Elsewhere, the author has demonstrated that parents' attitudes toward "being pregnant" often bear little relationship to those toward the fetus itself (Condon, 1985). In practice, the dichotomy "wanted" vs.

"unwanted" pregnancy is often less than clear-cut, and varying degrees of ambivalence, operating at different levels of awareness, prevail. Even a "wanted" fetus may become the victim of abuse.

The incidence of fetal abuse is currently unknown. As in the case of wife and child abuse, such behaviors are almost certainly underreported (Adams-Hillard, 1985; Rae-Grant, 1983). A small literature, recently reviewed by Adams-Hillard (1985), focuses on physical abuse of pregnant women by their partners. Gelles (1975) has speculated that sometimes the fetus may be the real target in such cases. MacKenzie *et al.* (1980) describe a case of fetal abuse by alcohol. To the author's knowledge, no case of physical assault on the fetus through the anterior abdominal wall by the mother has been reported previously, and the possibility is virtually never considered even by experienced professionals. In the author's experience, if specific inquiry is made, the impulse is not uncommon in pregnant women, and four cases of physical assault have been personally encountered, two of which are presented below. Estimates of the incidence of fetal abuse by alcohol or nicotine have been reported elsewhere (Kwok *et al.*, 1983; Little and Streissguth, 1981; Sokol, 1981; Streissguth *et al.*, 1983) and similar caveats would probably apply as regards underreporting.

The emotional and financial cost to society of fetal abuse is thought to be immense. The fetal alcohol syndrome has now become the third most common known cause of mental retardation in the United States, affecting one in 750 live births (Little and

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Streissguth, 1981). It has been estimated that the risks to the fetus from maternal alcohol and nicotine abuse alone outweigh those of diabetes, toxemia, Rh incompatibility, and other medical conditions for which extensive screening is routinely performed during pregnancy (Sokol, 1981). No information exists concerning the possible contribution of in utero physical assault to such complications as abortion, prematurity, stillbirth, deformity, or mental retardation.

The major advantages of defining such a concept are similar to those that have resulted from Kempe *et al.*'s (1962) coining the term "battered child syndrome." Such gains would include:

1. Increased awareness and heightened vigilance in professionals. Denial of the brutal treatment afforded children throughout history has been notoriously prominent by both professionals and society as a whole, as is apparent in any review of the history of child abuse (Smith and Pagan, 1978). As regards fetal abuse, the adverse effects of alcohol on the fetus have been documented since the time of Aristotle and, despite clear descriptions of the fetal alcohol syndrome published in 1968 (Lemoine *et al.*, 1968), the findings were ignored or dismissed until the paper by Jones *et al.* appeared in 1973. In both areas powerful taboos seem to operate that mitigate against both recognition and scientific investigation of the phenomena.

2. Defining the spectrum of fetal abuse raises the possibility that an understanding of the psychological processes associated with the more flagrant physical assaults may contribute to an increased awareness of those associated with the less obvious failures to protect the fetus from harm. Similarly, psychological mechanisms that operate to safeguard the fetus from these various kinds of assault may have significant aspects in common.

3. A better comprehension of fetal abuse may both enrich and be enriched by our understanding of child abuse in general. Of particular interest is the question of whether fetal abuse is an antecedent of child abuse.

4. As will be discussed further below, the delineation of the concept of fetal abuse permits the identification of a number of areas of interest to many health professionals where previous research findings may illuminate aspects of the fetal abuse phenomenon.

The quality of the intrauterine environment that an expectant couple endeavors to provide for their unborn child will, in part, be determined by the complex interplay between those factors favoring expression of hostility toward the fetus and those factors favoring its care and protection. The spectrum of fetal abuse arises when assaultive or nonprotective impulses attain behavioral expression at the expense of caring and protective ones. The present paper, after presenting three case vignettes illustrating the spec-

trum of fetal abuse, attempts a preliminary etiological formulation using research findings from a number of related disciplines.

### Case 1: Physical Fetal Abuse

D. R. was a 15-year-old girl living in a church-run home for teenage unmarried mothers. She was seen by the author at 25 weeks' gestation at the request of her obstetrician, to whom she had presented with an episode of atypical p.v. bleeding within a few hours of being informed that it was "too late" for an elective termination of her pregnancy. The obstetrician suspected that the patient may have "done something" in an attempt to cause abortion. On specific questioning by the author, the patient admitted that, since quickening, she had regularly punched the fetus through the abdominal wall in response to its movements.

The patient was the youngest of three girls, and her childhood was characterized by rotating placements in various foster families, state homes, and her own dysfunctional family. Her father had physically and sexually abused her from an early age. Her mother had told her in graphic detail of her attempts to induce the abortion of the patient by "jumping off chairs, lying in very hot baths, and getting drunk."

The patient had declined termination in early pregnancy at the insistence of her 18-year-old Greek boyfriend (the baby's father), who had subsequently become progressively more disenchanted with both the relationship and prospective fatherhood. Both had naively decided on termination at 25 weeks, which the obstetric unit had predictably declined to perform. Physical assault on the fetus had intensified as a result. The patient denied that the objective of her assaults was to cause abortion. The initial assaults appeared to be impulsive expressions of rage. Subsequently, once her fetal abuse had become known, she used it as a threat to pressure the obstetrician to perform a termination.

The patient discussed her fetus as follows:

"It's destroying my whole life . . . all it does all day is just lie there getting bigger and bigger and kicking me whenever it feels like it . . . I hate it and I want it out . . . I look terrible—so fat . . . I can't go anywhere socially . . . I can't even play netball . . . it knows what it's doing to me . . . it does it all on purpose. No one is interested in me—all the doctors care about is it."

*Comment.* Although the patient satisfied DSM-III criteria for conduct disorder, there was no evidence of mental retardation or other psychiatric illness. The level of intent, illogically attributed to the fetus, is not delusional and is identical with that present in the majority of parents who abuse their children in the

first year of life (Gelles, 1973). The patient's grossly emotionally deprived childhood rendered her psychologically unable to relinquish the role of nurturant-hungry child herself, a prerequisite for the mother role. The demands of pregnancy and of the fetus overwhelmed her and she projected her anger onto the fetus, perceiving it as attacking. She had never identified with her own mother until her own unplanned pregnancy gave her the opportunity to do so. Thus, she replicated her own mother's fetal abuse.

Experienced nursing and medical staff, after initially expressing disbelief at the patient's account of her assaults on the fetus, were profoundly distressed by the patient's behavior and several admitted that it caused them to feel "physically sick." There were insistent demands that the patient should be declared insane and treated as such. Such reactions are, of course, similar to those recorded historically when physical child abuse first came into prominence.

**Case 2: Physical Fetal Abuse**

The patient, Mrs. K., aged 19, was 34 weeks into her second pregnancy when she was referred to the author after her own request for psychiatric help. At the first interview (after specific inquiry about fetal abuse by the author) she related the following account of an incident that occurred 25 weeks into her first pregnancy when she was 17:

"I was worried about Joe [her de facto husband]. He was drinking and seeing other women—it was late at night—he wasn't home—I was just sitting watching television, not feeling angry at all. I felt the baby move and I suddenly thumped it as hard as I could, only once. I don't know why I did it ... I felt terribly guilty and didn't say anything to anyone ... I thought I must have killed it because I hit something really hard, like a bone, and the next day I had a huge bruise on my stomach."

In reply to a question about how she remembered feeling about the fetus on her first pregnancy, she replied: "That's just it ... I didn't feel anything at all ... most of the time I forgot it was there ... it was a real 'it.' I thought of it as his baby, not mine."

The patient was herself a child who suffered physical abuse from a brutal alcoholic father and had failed to be protected by a passive, uncaring mother. She smoked and drank moderately heavily throughout both pregnancies ("because I don't believe what they say about it harming the baby").

*Comment.* The patient's physical fetal abuse, representing, in part, a displacement of anger felt toward her de facto husband onto "his" fetus, had continued as physical child abuse in the neonatal period. The baby had been removed from her care by the authorities at the age of about 6 months. Mrs. K. also related

that during her first pregnancy her de facto husband had "tried to punch me where the baby was."

**Case 3: Fetal Abuse by Alcohol**

The patient was a 25-year-old professional woman who, previously a light drinker, had commenced drinking heavily toward the end of the second trimester of her first pregnancy. Major marital dysfunction dated from confirmation of the pregnancy, and both partners had been ambivalent about termination. She had concealed her alcohol problem from her obstetrician and was interviewed by the author at 30 weeks as a result of her husband's insistence that she should seek help. She stated:

"I've had to give up too much for this pregnancy—I feel like the baby is using me up—it's taking everything including my energy and giving nothing back ... I look awful ... I have rights, too, but everyone only thinks of the baby's rights, especially Peter (her husband) ... of course, I know alcohol is bad for the baby but I've got a right to some pleasure ... I'm angry with Peter and with the pregnancy." Interviewer: "When you feel angry like that, do you ever feel like taking it out on the baby—like hitting it?"

Patient: "Yes, often, especially when it moves. The anger really frightens me—I would never hit it.—I know I wouldn't actually do anything."

Interviewer: "I wonder if your drinking might be your way of punishing the baby for what you feel it's done for you."

Patient: "I've thought of that, many times. I think it might ... I feel so guilty about it."

*Comment.* This patient did not satisfy diagnostic criteria for any psychiatric diagnosis other than alcohol abuse. The latter was, as always, overdetermined. However, there was a strong impression that one function it served was to assault the fetus, which was experienced by her as alien and devouring.

**Discussion**

*Fetal Abuse and Child Abuse*

There is a consistent finding in the literature that abused children tend to have low birth weight, and Smith and Hanson (1974), in one of the few carefully controlled studies of abused children, found a fourfold increase in low birth weight that was independent of social class. The usual explanation of such findings involves invoking the hypothesis of Klaus *et al.* (1972) that early maternal-infant separation (necessitated by the low birth weight) leads to subsequent dysfunctional bonding, predisposing to child abuse. However, Smith and Hanson (1974) remark that few of their babies underwent separation. Moreover, in recent years the evidence upon which Klaus *et al.*'s (1972) findings were based has been much criticized (Herbert

*et al.*, 1982; Lamb, 1982), with the result that whether or not early separation affects later bonding should be considered as unconfirmed. An alternative explanation of the association between low birth weight and subsequent child abuse is that fetal abuse is an antecedent of child abuse. It is clear that nicotine and alcohol use during pregnancy cause low birth weight. Moreover, abdominal trauma, although unlikely to seriously damage the fetus (cushioned by the amniotic sac), may precipitate labor with resultant prematurity and low birth weight.

Several etiological themes recur in the child abuse literature that may potentially illuminate fetal abuse. First, parents who abuse their children often have unrealistic and idealized expectations of parenthood. They look to the child to gratify a variety of their needs and experience the demands of the child as a deliberate and personal attack against which they retaliate. Pregnancy tends to be idealized in our society, and encountering the reality of losses and threats inherent in pregnancy constitutes a crisis for most normal women (Lefkowitz, 1957) and overwhelms a significant minority (Oakley, 1980). The losses and threats, if handled maladaptively, lead to depression and anxiety, respectively. The fetus, whose intrapsychic representation is a curious admixture of fantasy and reality, is a recipient par excellence for projection and displacement. Thus, not only may it be perceived as the cause of all losses, dissatisfactions, and threats of pregnancy, but also may be perceived as having deliberate intent. The resultant "attacking," "demanding" fetus may then "need to be punished" in a manner analogous to the abused child, as described in case 1 above.

Second, many child-abusing parents have themselves received grossly inadequate parenting, leaving a legacy of unmet dependency needs. Such parents have difficulty relinquishing the unconscious wish to remain children themselves (Smoller and Lewis, 1977). As in cases 1 and 3 cited above, the fetal abuse may be triggered by a woman's perception of her spouse, family, or doctor, as directing their attention to the fetus rather than to her. The resultant jealousy and anger at the perceived rejection may be translated into an attack on the fetal "rival" or into a more passive failure to protect it from harm. The latter could be considered the antenatal equivalent of some forms of failure to thrive in which neglect of the child or fetus results in poor weight gain and stunted development in both instances.

#### *Fetal Abuse and Neonaticide*

The phenomenon of neonaticide, defined as murder of the newborn during the first 24 hours of life, most clearly approximates physical fetal abuse, at least from

a timing perspective. In the absence of any systematic study of the latter, the correlates of neonaticide may potentially contribute to our understanding of the spectrum of fetal abuse.

Reviewing the literature in 1970, Resnick concluded that: "Hundreds and possibly thousands of neonaticides still occur in this country (United States) each year" (p. 1419). Three of Resnick's findings on contemporary neonaticide warrant cautious generalization to antenatal abuse and recur as themes in the cases cited above:

1. Unlike women who subsequently murder their older children, mothers who commit neonaticide are rarely psychotic. The great bulk of neonaticide is committed simply because the child is not wanted. Psychosis is not common in pregnancy and probably is not a major factor in fetal abuse.

2. "Passivity" is the single most important personality characteristic differentiating women who commit neonaticide from those who obtain abortions. In fetal abuse, it is likely that passive acceptance (or denial) of an unwanted pregnancy is common and consequently elective termination has not been sought.

3. Mothers who commit neonaticide deny or suppress the reality of their pregnancy (or rationalize that they will have a stillbirth) and hence make no advance preparations. They murder the infant when confrontation with its reality (at birth) breaks through the defenses. Antenatally, the event that most dramatically confirms fetal existence, and threatens denial, is quickening. In both of the above case reports of physical abuse, assaults were clearly linked to the experience of fetal movement. Around the time of quickening the fetus also begins to acquire the attribute of "separateness," facilitating projection and displacement of hostile impulses.

#### *Fetal Abuse and the Psychobiology of Pregnancy*

A vast literature exists on the psychobiology of pregnancy, much of which is highly relevant to fetal abuse. Space permits only two such aspects to be highlighted here. First, several authors (Bibring, 1959; Brazelton, 1973; Caplan, 1961) have independently observed a shift toward more primitive "primary process" thinking and mechanism, which occurs in many pregnant women during the second and third trimesters. There is often an associated increase in lability of affect. Both these phenomena may be hormonally mediated and have been likened to a transient episode of "borderline" functioning (Bibring, 1959). The constellation of stress, primitive psychic functioning, emotional lability, and increased impulsivity could be construed as predisposing to fetal abuse, the unborn child being the victim of displaced or projected hostilities.