

An Analysis of a Protective Custody
Program for Drunks in Barrow, Alaska

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1.0 Introduction: The Nature of the "Alcohol Problem" in General

1.1 Drinking and Drunkenness

The immediate and direct effects of consuming alcohol at elevated rates are quite familiar: one gets drunk. Intoxication diminishes (or at least alters) the mental and physical capabilities of the drinker. With respect to mental states we often say that drinking "impairs judgment." The drinker seems less alert in scanning his environment for problems and opportunities, and less discriminating in focussing his attention on the most important features. Moreover, in choosing actions, the drinker tends to ignore consequences that would be the focus of intense concern in a sober state. In short, the drinker becomes reckless. On the physical dimension, the drinker is likely to become distractable and clumsy. Typically, he finds it impossible to maintain vigilance, to string cumulative actions together in a co-ordinated sequence, and to react quickly and reliably to simple physical demands.

Of course, these effects of "intoxication" are all matters of degree. And the degree of mental and physical disability experienced by any given drinker will depend on a great many factors. Perhaps the most important is how much and how fast a person drinks. At very high (short-term) rates of consumption, the physiological effects of alcohol alone are capable of swamping all other factors. Given enough alcohol, one can reliably produce a stupor - even death - no matter what the setting. In the more usual case, however, the degree of intoxication experienced by a drinker will depend on such factors as his size and weight, how recently he ate, his own hopes and expectations about the effects of drinking, and even the expectations and demands of the people around him

as well as the amount he drinks. An excited, skinny teenager anticipating a wild night with pals can become quite "drunk" on a quantity of alcohol that would produce no effect on a heavy, middle-aged man who had just finished a large dinner and had no greater aspiration than to pass the evening in a relaxed frame of mind.

While drinking may (at certain rates of consumption in given situations) produce some degree of "incapacity," the incapacity is not what we ordinarily think of as "the alcohol problem." Of course, there are some who regard even the most temporary departure from "sobriety" as a significant moral and social problem -- a willful denial of individual responsibility in a society that both values and depends fundamentally on a sturdy, universal commitment to this standard. But for most of us, short-lived, irregular periods of intoxication are not a substantial problem. In fact, we often regard drinking and intoxication as beneficial--a harmless indulgence when we feel unusually beset or entitled, a way of turning an ordinary event into a festive occasion, or a means of creating a short vacation from pressing worries and anxieties. To create a problem for drinkers and others, some special characteristics beyond drinking and drunkenness must come into play.

1.2 The "Alcohol Problem"

When we think of the "alcohol problem," some paradigmatic situations come inevitably to mind. We imagine the drunk driver who causes a serious accident by ignoring a road sign or losing control of his car; the domestic fight which (when fueled by alcohol and the ready availability of weapons flares into a bloody assault; the previously responsible husband, father

and employee whose ability to meet the needs and expectations of his spouse, children and employer deteriorates as a result of increasingly frequent drunkenness and hangovers; the chronic, aging drinker whose cirrhotic liver becomes a chronic health problem and ultimately a decisive factor in his death; and perhaps even the rowdy group of teenagers or the skid-row bum whose outrageous behavior offends our sense of propriety and order when we meet them on the street.

Of course, these paradigmatic situations may capture only a portion of a proper accounting of the alcohol problem. But, if we can take these paradigmatic situations as typical of the circumstances under which alcohol becomes a problem, we can make an important observation. None of these bad effects results from drinking or drunkenness alone. Instead, in order for drinking to become a problem, periods of drunkenness must either: 1) occur in a physical or social setting that is in some sense hostile to the incapacities and behavior produced by drinking; or 2) occur sufficiently frequently over a long period of time that the drinker faces not only an increased chance of being drunk in the wrong place in the wrong time, but also additional health risks (created by the sheer quantity of alcohol consumed), and social risks (occasioned by becoming less reliably available and competent in social roles). In short, "the alcohol problem" depends partly on the interaction between the demands of the external environment and the level of incapacity produced by (short-term) drinking, and partly on the frequency of drinking and drunkenness over the long term. These observations merit some elaboration.

1.3 The Role of the Environment

In principle, an intoxicated person need not pose a threat to himself or others even when he is very drunk. One can imagine constructing an environment so benign that even the drunkest people would face virtually no risks. Such an environment would require virtually no positive action from the drinker to insure his survival. There would be no substantial risk of starving, freezing, suffocating or a serious accident even if the drinker were extremely negligent, inattentive or clumsy. Moreover, the environment would be designed to prevent the drinker from taking actions that were risky. It would prevent suicides or attacks on others; it would guard against accidents; it would summon medical aid quickly if the primary prevention efforts were to prove unsuccessful, and it would prevent the drinker from moving to more dangerous environments. The environment might even be designed to protect the sensibilities of people who hated to encounter drunks by effectively isolating them from the community.

From their description, it might appear that it would be extremely difficult to construct safe environments for drunks. In fact, however, such environments are routinely available in the form of hospital wards, jail cells, and (less routinely) "detoxification centers". Even more importantly, my hunch is that relatively secure environments are regularly constructed by private arrangements. After all, a home, a friend's house, or a neighborhood bar are apt to be only a little less forgiving and more demanding than a hospital ward. At home, a drunk may have to avoid stairs and remember to put a lighted cigarette in an ashtray rather than a wastebasket, but to compensate he may receive much closer supervision and greater help than he could reasonably expect in a ward or a jail. Similarly, at a

friend's house, the drunk may face the problem of getting home, or may become involved in a violent dispute, but he is unlikely to freeze, starve, burn, or commit suicide. Even a bar will provide some protection against accidents, suicides and so forth. In fact, if the bar is well-managed, it will guard against violent attacks. And, if it is a neighborhood bar, the drinker may not even face a substantial risk in getting home. In short, a very large number of environments may meet sufficiently high standards of benignity that the drunk will be well protected. Physical and social environments which are very hostile to drinkers may be quite rare.

In any case, I think it is clear that many "alcohol-related problems" depend on an unfortunate coincidence of a hostile external environment with an inappropriate degree of recklessness and clumsiness on the part of the drinker. It may be quite safe to get drunk in one's own home surrounded by people who care and will help. But if one were equally intoxicated and driving home, working with fast moving equipment, or surrounded by angry and belligerent people, the consequences of a given amount of drinking would be quite different. So, the nature of the alcohol problem depends as much on the settings within which people get drunk as it does on how drunk they get.

1.4 The Role of the Long Term Pattern of Consumption

Drinking can also become a problem (nearly independently of the setting), if the drinker drinks frequently over a long period of time. A long term pattern of drinking to excess generates problems in at least three different ways. First, to the extent that a drinker is frequently (as opposed to occasionally) intoxicated, the chance that the temporary incapacity associated with being drunk will coincide with (momentarily or

continuously) dangerous environmental conditions will increase. The frequent drinker tempts fate more often than the less frequent drinker who has binges.

Second, the sheer quantity of alcohol consumed produces some important health effects all by itself. Frequent drinking impairs a person's liver functioning about as predictably and inevitably as smoking produces lung cancer. A drinker may die of something before his liver finally deteriorates, but if nothing else kills him, his liver eventually will. In addition, frequent drinking produces a tolerance for alcohol and leads to withdrawal symptoms when alcohol consumption is reduced. The withdrawal symptoms are themselves debilitating in the same way as are acute attacks of depression or a flu virus would be. But perhaps more importantly, these physiological mechanisms may provide some impetus to continue drinking. To the extent that these mechanisms sustain a long term pattern of consumption, they help to increase the drinker's vulnerability to those special risks that come from maintaining a chronic high level of consumption being catalogued here.

Third, frequent periods of intoxication will gradually lead to a change (generally a deterioration) in a drinker's social status. Most individuals are surrounded by a group of people who depend on them. A spouse needs help with household chores, a secure economic future, interest and affection. A child needs discipline, instruction, and love. An employer needs regular attendance, competent performance, and (occasionally) initiative. If a person becomes frequently (and somewhat unpredictably) drunk, these people will have their expectations and needs fulfilled less reliably. The immediate effects are that these "dependants" take losses. If they can substitute someone else for the (now) unreliable person, they will do so

and cut the drunk off from the relationship they previously enjoyed. If they cannot easily substitute someone else, they will stay locked in the relationship and become bitter and angry about their disappointed expectations. In any event, the drinker will suffer a loss in self-esteem as he is daily surrounded by expectations that can't be fulfilled and anger from those who are disappointed.

1.5 Summary

Thus, drinking and drunkenness can become a problem, but only in certain circumstances. One circumstance is where environmental demands and contingencies coincide in an unhappy way with a given level of alcohol-involved incapacity or inattentiveness. The second circumstance is where the drinking goes on at a high enough level (and the periods of intoxication come sufficiently frequently) that the drinker not only faces very high risks of finding himself drunk in an inhospitable environment, but also begins to suffer some predictable health consequences and to lose his capacity to meet the expectations of family, friends, and employers. The former problems can crop up (to varying degrees depending on the environment) anywhere people get drunk frequently. This last problem, however, (the deterioration in social status) occurs only where the social structure surrounding individuals cannot accommodate frequent periods of intoxication and capacity. Thus, to analyze the nature of "the alcohol problem" in a given situation one must look only at the total amount of drinking and drunkenness in the population, but also at the physical and social environment in which the drinking occurs, and the distribution of long term drinking patterns in the population.

2.0. The Apparent Nature of the "Alcohol Problem" in Barrow

Given that the relationship between "drinking" and "the alcohol problem" is mediated by both the setting in which the drinking occurs and the individual patterns of consumption, to gauge the size and nature of "the alcohol problem" in Barrow it is necessary to examine the local patterns of consumption and the environments in which the drinking occurs. That is the purpose of this section. While the data relevant to these issues are less complete and reliable than one would ideally desire, sufficient evidence exists to suggest an interesting but somewhat speculative conclusion: Barrow appears to be a place where it is quite dangerous to be drunk, but relatively less dangerous to be a drunk. The prevailing physical and psychological conditions of the town make periods of drunkenness unusually dangerous -- even explosive. But the existing social environment (composed primarily of spouses, children, employers, friends and neighbors) appears to be relatively tolerant of frequent periods of intoxication. As a result, the chronic drinker in Barrow seems to inflict (and absorb) fewer social losses than his counterpart in the "lower 48." To reach this conclusion, one must examine the pattern of alcohol consumption in Barrow and see how that fits into the physical and social environment to produce effects that are in some sense "damaging" to the drinkers and others in the community.

2.1. The Pattern of Alcohol Consumption

A widespread view is that Barrow has long been burdened by a very high level of alcohol consumption. When asked in interviews, long-time residents of the city will complain that there has always been a lot of drinking. Moreover, as a visitor to the town, one encounters

drunken people much more frequently than one expects, and at odd hours (e.g., 10:00 A.M.). Finally, in the back of one's mind is the knowledge that societies undergoing rapid social change are very likely to produce high rates of alcoholism, and that native hunting societies have often proved unusually vulnerable to alcohol when it has been introduced by white cultures. For all of these reasons, one expects to find high levels of alcohol consumption endemic in Barrow. One expects both the mean consumption to be high, and to find a relatively large fraction of the population consistently using alcohol at very high (short term) rates of consumption.

Given these strong expectations, it is disconcerting to discover that the few "hard numbers" that can provide clues about the pattern of drinking in Barrow suggest a slightly different story. It appears that the quantity of alcohol consumed in Barrow is high, but not completely beyond the experience of other troubled communities. In addition, to the extent that drinking has been widespread and frequent, it appears that this is a relatively recent phenomenon. Finally, it appears that the individual patterns of consumption are distributed in ways that are similar to those observed in other communities, and that the fraction of the population involved in very serious use patterns is high, but not grotesquely so. The relevant facts are presented below.

2.1.1 Quantity of Alcohol Consumed

The only available indicator of the amount of alcohol consumed in Barrow is the reported sales by the Barrow Community Liquor Store. This is an imperfect indicator for at least two reasons. First, it is not clear what fraction of the total alcohol consumed in Barrow moved through the store rather than other distribution mechanisms (e.g. direct individual orders from other liquor stores in the state, or

"bootleg" purchases from people who ordered more than they needed for their individual consumption). Since the store went in and out of business frequently (as the town voted to be "wet" or "dry"), and since other purchase options existed even when the community store was operating, it is reasonable to assume that the store never accounted for all the alcohol consumed in Barrow. At best, then, total sales by the store will give us a "lower bound" estimate of consumption, though it may be close to actual consumption in the period in which the store was conveniently and reliably available to the citizens (e.g. F.Y. 1975). Second, it is hard to convert total sales by the store into quantities of pure alcohol since no information was available during our visit on the prices and quantities of specific kinds of alcoholic beverages sold. What we do have is cash register tapes that indicate the number of items sold and the total price of the transaction. An analysis of these tapes produces evidence which is consistent with the hypothesis that a "standard transaction" involved quarts of two different kinds of liquor selling for \$18.02 and \$15.37. (See Appendix 2 for detailed evidence relevant to this conclusion.) If we assume that all the transactions involved these quantities, we can calculate high and low estimates of the numbers of gallons of distilled liquor sold. At best, then, this information produces an imperfect estimate of the total consumption.

Table 1 presents the data on total sales by the liquor store and shows the calculations that yield diverse estimates of the per capita consumption of alcohol in Barrow. The estimates vary from 2.43 to 7.15 gallons per person per year. In interpreting this data, I would be inclined to take the numbers from F.Y. 1975 as the ones that were closest to actual consumption in Barrow. The reason is simply that F.Y. 1975 was the year in

Table 1:

Quantities of Alcohol Supplied by the
Barrow Liquor Store: FY's 1973, 1975-1978

	F.Y. 1973	F.Y. 1975	F.Y. 1976	F.Y. 1977	F.Y. 1978
1. Total Liquor Store Sales	\$564,000*	\$810,000	\$438,000**	\$647,000**	\$651,000**
2. Estimated Price/Gallon					
High	\$72.00	--	--	--	--
Low	\$61.00	--	--	--	--
3. Calculated Total Gallons of Liquor (80-100 proof) Sold					
Low	7,830	11,250	6,085	8,990	9,040
High	9,250	13,280	7,180	10,610	10,670
4. Total Population of Barrow (Village; > 14)	1,040	930	1,000	NA	1,400
5. Estimated Per Capita Consumption in Gallons/Year of 80-100 Proof					
Low (Assume High Price/Gallon)	7.53	12.10	6.08	NA	6.45
High(Assume Low Price/Gallon)	8.19	14.30	7.18	NA	7.62
6. Estimated Per Capita Consumption in Gallons/Year of Pure Alcohol					
Low (Assume 80 proof)	3.01	4.84	2.43	NA	2.58
High(Assume 100 proof)	4.44	7.15	3.59	NA	3.81

*First year of operation. Began in the middle of the year, but the figures reported have been annualized.

** "Dry years" voted by the citizens covering the same portion of these fiscal years.

which the liquor store was more likely to have supplied most of the liquor in Barrow. In F.Y. 1973, the liquor store was just being established and had to break into existing distribution systems. The data from F.Y. 1974 was not available. And each of the fiscal years from 1976 to 1978 involved periods when the liquor store was closed by a vote of the Town Council. (It was closed in calendar years 1976 and 1978 which overlap with fiscal years 1976, 1977 and 1978.) Since F.Y. 1975 is the only year for which we have data in which the liquor store was neither recently opened nor out of business for half the year, the estimates for that year are likely to be the closest to actual levels of alcohol consumption in Barrow. It is important to keep in mind that even though the F.Y. 75 estimates are high relative to the other estimates of consumption, they will understate actual consumption due to the existence of other sources of supply.

Table 2 places these estimates of Barrow consumption in the context of consumption estimates for other populations. As one can see, the estimates for Barrow are above the range of average national or state levels of per capita consumption. Still, Barrow's level of consumption is probably not all that unusual. There must be many "problem communities" like Barrow within the nations and states that have lower average per capita levels of consumption. Thus, the population of Barrow consumes enough alcohol to place them certainly among the worst half of all communities in the country, probably in the worst third, and maybe even the worst tenth. Their consumption is high, but not unique.

2.1.2 The Frequency of Drunkenness

Predictably this quantity of alcohol in Barrow produces a significant amount of drunkenness -- both public and private. Just how much drunkenness can be roughly calibrated by observing the number of

Table 2
 Comparisons of Per Capita
 Consumption of Alcohol

	Per Capita Consumption (Gallons of Pure Alcohol)
Barrow (1975) ¹ (Population \geq 15)	5.0 - 8.0
Alaska (1975) ¹ (Population \geq 19)	4.54
U. S. (1977) ² (Population \geq 18)	2.86
Greenland (1973) ³ (Population \geq 15)	5.0
Range of U.S. (Individual ⁴ States) in 1974	1.6 - 6.5
Range of National ⁴ Averages 1970-1974	0.8 - 6.2

1. See Table #1.

2. Paula Ramsay, "State Alcoholism Plan for 1979-1980 (Draft)"
 1979, pp. 17,19.

3. Alcohol Control Policies in Public Health Perspectives,
 Finnish Foundation for Alcohol Studies, 1975, p. 63.

4. Rutgers Alcohol Studies: 1976

"detentions" for drunkenness. Of course, the detention rate is a very imperfect measure of absolute levels of drunkenness. Sometimes we suspect the police of over-enforcing public drunkenness laws either in general or against some segment of the population. In such a case, observed frequencies of "detention" would exaggerate the frequency of drunkenness in the population. More often, however, we acknowledge the limitations of police capabilities to observe and respond to all offenses (even when assisted by private complainants) and assume that much drunkenness (even public drunkenness) goes undetected. In general, then, we think that the detention rate will understate actual levels of drunkenness by a substantial amount -- perhaps by an order of magnitude or more.

Table 3 presents data on rates of "detentions" for public drunkenness among different segments of the Barrow population, and on the fraction of the various segments that have been detained at least once. To people accustomed to analyzing public drunkenness offenses in urban areas of the U. S., it is shocking to discover that one-third to one-half of the population have been detained for drunkenness, and that the expected rate of detentions is about one per person per year. Since we are accustomed to thinking that only very bad cases (i.e. people who are very drunk very often) will be picked up by the police, these numbers seem to indicate very high levels of drunkenness in the population. In interpreting these data, however, it is important to keep in mind that a "detention" for drunkenness in Barrow in 1978 is nothing like a "public drunkenness arrest" in urban areas of the U.S. Both the legal standard and the level of proof required to authorize detention are much different than those required to support a criminal arrest for drunkenness. And the citizenry of Barrow are probably much more likely to call the police for help in managing drunks than typical inhabitants of U.S. urban centers would be. As a result, a much larger

Table 3:

Rates of Detention for Drunkenness
in Barrow Village: 1978

	Detention Rate		Detainee Rates	
	No. of Detentions	Rate of Detentions Per Person Per Year	No. of Individuals Detained	Fraction of Population Detained
1.0. Population Aged 15-24				
1.1. Total Population (High Estimate=420) (Low Estimate=416)	416 416	1.0 1.0	160 160	38% 38%
1.2. Male Population (High Estimate=224) (Low Estimate=210)	294 294	1.3 1.4	101 101	45% 48%
2.0. Population Aged 25-44				
2.1. Total Population (High Estimate=576) (Low Estimate=570)	521 521	0.91 0.91	202 202	35% 35%
2.2. Male Population (High Estimate=320) (Low Estimate=300)	429 429	1.3 1.4	152 152	48% 51%
3.0. Population Aged 45-64				
3.1. Total Population (High Estimate=832) (Low Estimate=660)	159 159	0.19 0.24	62 62	7% 9%
3.2. Male Population (High Estimate=512) (Low Estimate=330)	112 112	0.22 0.34	42 42	8% 13%

fraction of the actual events involving "incapacitating drunkenness" are likely to show up as detentions in Barrow than would be the case in metropolitan areas of the U.S. In effect, the tip of the iceberg of drunkenness one sees in the Barrow detention program is a larger share of the total iceberg in Barrow than one would ordinarily expect.

One is tempted to try to estimate how much drunkenness actually occurs in Barrow on the basis of these figures. As a wild guess, we might assume that some 2% - 5% of the actual episodes of incapacitating drunkenness resulted in a detention in 1978. (Note this is the same as saying that the probability that an incapacitated drunk will be detained lies between 1 in 20 and 1 in 50.) If the actual number lay in this interval, we could calculate that the average number of episodes of incapacitating drunkenness experienced by the Barrow population would be about 20 - 50 times a year, or about once a week or once a fortnight. This would indicate a fairly high level of drunkenness and at the same time be roughly consistent with our estimates of alcohol consumption.

We know, of course, that this alcohol consumption is not distributed evenly across the population. There are a great many people who consume little or no alcohol and never get drunk, and a relative few who consume large quantities of alcohol and are drunk much of the time. Thus, another way to get at the problem of describing the patterns of alcohol consumption in Barrow is to ask how many people are drinking at very high rates of consumption. Again, in making this judgment, we will have to rely on data from the detention program.

Table 4 presents data on the number of people within given

Table 4

The Fraction of People Being Detained
Frequently for Drunkenness in Barrow

	3 Detentions	4-5 Detentions	6-10 Detentions	≥10 Detentions
1.0. Population Aged 15-24				
Total Population	418	418	418	418
Number Detained	13	19	11	5
Fraction of the Population	3.1%	4.5%	2.6%	1.1%
Cumulative Fraction	11.4%	8.3%	3.8%	1.1%
2.0. Population Aged 25-44				
Total Population	573	573	573	573
Number Detained	21	24	16	4
Fraction of the Population	3.7%	4.2%	2.8%	0.6%
Cumulative Fraction	11.3%	7.6%	3.4%	0.6%
3.0. Population Aged 45-64				
Total Population	746	746	746	746
Number Detained	6	5	6	1
Fraction of the Population	0.8%	0.7%	0.8%	0.1%
Cumulative Fraction	2.4%	1.6%	0.9%	0.1%

age categories that have been "detained" with various frequencies. Of course, since we don't know the ratio of "detentions" to unobserved periods of incapacitating drunkenness, we don't know quite where to draw the line and say that some individual is an "alcoholic." Still, if we use the same guess about the ratio of detentions to drunkenness made above, we can calculate that a person detained 3 times would be drunk approximately 60 - 150 times per year; a person detained 4 times would be drunk approximately 80 - 200 times per year; and so forth. If we think of a serious drinker as someone who is drunk every day, and if our guess about the ratio of detentions to actual episodes of drunkenness are approximately correct, one would have to be detained from 5 - 7 times over the course of the year to be considered an alcoholic. Thus, if it appears that Barrow is now supporting some 1% to 10% very heavy drinkers in its population (depending on how one defines heavy drinkers). This estimate places Barrow well beyond national averages in terms of the fraction of the population that are "problem drinkers."

The Longevity of the Problem

So far it appears that Barrow is a fairly hard drinking community. A useful question to ask is how long it has been that way. If it is an old condition, it may be relatively hard to root out, and there may be less need to do so since the community may have successfully adjusted to the high level of drinking. If it is a new problem, there may be a special need and a special opportunity to help the community fend it off.

The most useful source of data on the duration of high levels of drinking in Barrow are the death certificates filled out by the coroner's office for at least the last 25-30 years. This is a valuable source primarily because these death certificates are the only official records that have been kept more or less consistently over a long period of time.

The data is somewhat weak for our purposes since the connection between deaths and high levels of drinking need not be direct and powerful. Still, to capitalize on the value of this source as an indicator of long term trends in levels of drunkenness, I decided to analyze the records in a particular way. I assumed that the Arctic environment was a particularly dangerous environment in which to be drunk. Moreover, I assumed that drunkenness would be most pronounced among people aged 15-40. Consequently, the number of deaths from traumatic causes within this age group might give us a rough indicator of long term changes in the level of drunkenness. To calibrate long term levels of drinking, it also made sense to keep track of deaths from acute alcohol poisoning or chronic alcoholism as well. Finally, we could keep track of all the other (largely medical) deaths just to be sure that reporting of deaths was fairly consistent over time.

Table 5 presents the results of this analysis. As one can see, the number of traumatic deaths from motor vehicle accidents, fires, drownings, etc., in this age group averaged approximately 1 per year from 1952 until 1973. Suddenly, in 1973, the number of deaths jumped to six, and then averaged 5-6 deaths of this type in this age category for the next 5-6 years. In effect, the death rates from this cause increased by a factor of 5 in 1973. Three additional facts lend some credence to the notion that this sudden increase is produced at least partly by a dramatic increase in alcohol consumption. First, deaths from acute alcoholic poisoning appear for the first time in the same period (e.g., 1973-1978). Second when autopsies were performed on the traumatic deaths and the results reported back to the coroner and kept in the files, all reported levels of alcohol in the blood are well above the legal definition of drunkenness (e.g. 0.1%). Third, the Barrow Community Liquor Store opened in 1973. If this analysis is correct, the opening of that store cost approximately

4 additional lives in the 15-44 age group each year of operation. So, it appears from this data on causes of death that heavy drinking in Barrow may be a relatively recent development.

2.2 Problems Associated with Drinking in Barrow

The heavy drinking in Barrow can be expected to produce some difficulties both for drinkers, and for those who live with and depend on them. We can look at these problems in three broad areas: the health of the drinkers; the general level of violent physical attacks in the community; and the general "social functioning" of the drinkers. With respect to each of these areas, it is useful to present evidence on how much difficulty alcohol seems to be producing.

2.2.1 The Health of Drinkers in Barrow

The most dramatic indicator of health problems associated with drinking is the evidence on mortality that has already been presented. When we look at the ways that Alaskan Natives have died over the last 6 years, we see that deaths that can plausibly be linked to drunkenness loom surprisingly large in the overall pattern of deaths. If we include acute alcohol deaths, and "excess" traumatic deaths among people ages 15-44 as alcohol deaths, we can calculate that drunkenness accounted for 35% of all deaths in Barrow over the last 6 years! Moreover, if we were to reckon the impact of alcohol not in terms of the simple number of deaths, but instead in terms of the number of years lost as a result of "premature death," the adverse effect of alcohol on mortality in Barrow would be even more dramatic.

Of course, we cannot be sure that alcohol was the decisive cause of death in these traumatic deaths. It is by no means certain that

alcohol was even present in all of these events, to say nothing of the decisive cause. Still, for at least some of these events, autopsies were requested, the reports submitted with information about "blood alcohol content" (BAC) included, and then kept on file in the coroner's office. Table 6 presents the data. It seems very significant that in every case where an autopsy was requested, performed, reported and kept on file, alcohol was found not only to be present, but to be present at sufficiently high levels that one can easily imagine that the alcohol played a crucial role in affecting the events that led to death.

Thus, alcohol seems to play a significant role in affecting the mortality of the native population of Barrow. It is interesting to note, however, that these effects are produced not by chronic, long term use of alcohol (which would produce cirrhosis and perhaps cancer of the neck), but instead by unfortunate coincidences of an environmental demand and temporary incapacity. This is not to say that alcohol could not in the future end up killing people through cumulative long term effects. But the imminent, current danger is simply being drunk in a hostile environment.

These deaths resulting from drunkenness represent the tip of an iceberg. Beneath this phenomena is a less visible, but still fairly serious problem of alcohol induced morbidity. Table 7 presents data on in-patient and outpatient treatment of "alcohol misuse" in the Barrow Service Unit of the Public Health Service. Table 7 also presents data on the frequency of treatment for accidents and injuries -- some portion of which were certainly produced at least partly by drunkenness. These admissions add up to a substantial health burden. In fact, admissions for alcoholism account for approximately 9% of all in-patient visits and 6% of all out-

Table 6

Known Alcohol Involvement in Traumatic
Deaths of Those Aged 15-40

Year	Total Deaths	Autopsy Report Filed With Info on BAC		No Autopsy Report
		Alcohol Reported	0.1% No Excessive Alcohol Found	
1978	2	2	0	0
1977	6	2	0	4
1976	4	1	0	3
1975	4	1	0	3
1974	9	4	0	5
1973	6	1	0	5
1972	2	1	0	1
1971	1	1	0	0

Table 7

Alcohol Related Claims on Services of
Barrow Service Unit of the Public
Health Services

	<u>In-Patient Treatment</u>			<u>Out-Patient Visits</u>		
	1978	1977	1976	1978	1977	1976
1.0. "Alcohol Misuse"						
Number	44	23	43	609	597	451
Per Capita Rate						
Fraction of all Visits	9.2%	6.0%	9.5%	6.5%	7.2%	5.6%
2.0. Alcohol Related Accidents and Injuries*						
Number	16	15	24	564	554	644
Per Capita Rate						
Fraction of all Visits	3.3%	3.9%	5.3%	6.0%	6.7%	8.0%

*Arbitrarily assumed to be 25% of all events.

patient visits. If we include 25% of the accidents and injuries to these numbers as a conservative estimate of the fraction of these events in which drunkenness played a major contributing role, we can calculate that alcohol accounted for some 10%-15% of both inpatient and outpatient services delivered in Barrow. With the exception of flu, pneumonia, deliveries and non-alcohol related accidents, no other health problem approaches drinking as a problem that consumes medical resources in Barrow.

2.2.2 Violent Physical Attacks

Buried in the data describing mortality and morbidity from traumatic events are some of the results of violent attacks and hostile confrontations in Barrow. While the more serious health effects of these attacks have already been described, I think these events produce effects on the quality of life in Barrow that go well beyond the mere health consequences. Social relationships within families, among friends, and between strangers on the street are all affected by the frequency and character of violence in the community. Hence, assaults, murders, and child abuse and neglect deserve a separate analysis.

Table 8 presents some data showing the fraction of violent attacks that involved a drunk offender for different relationships between the defendant and victim and for different degrees of injury resulting from the attack. The data covers all violent attacks (including homicide, rapes, and child abuse cases) for three years from 1976-1978. Inspection of this table indicates that a drunk offender is involved in at least half and probably two-thirds of all the violent attacks that have occurred in Barrow over the last 3 years. Moreover, the significant role of drunk offenders stands up in all relations and for all levels of injury, although alcohol does seem to become slightly less important as one moves out to less intimate relations.

Table 8

The Fraction of Violent Attacks*
Involving a Drunk Offender: 1976-1978

(By Relationship of the Defendant and Victim and Seriousness of Injury)

Status of Offender Relationship of Offender to Victim/Degree of Injury	Drunk		Probably Drunk		Apparently Not Drunk		Total
	N	%	N	%	N	%	
Spouses	14	50%	7	25%	7	25%	28
All Assaults	12	63%	7	26%	2	11%	19
"Serious" Physical**	2	22%	2	22%	5	56%	9
Minor Physical	0	0	0	0	0	0	0
Threats Only							
Relatives	25	52%	12	25%	11	23%	48
All Assaults	12	50%	7	29%	5	21%	24
"Serious" Physical**	10	56%	4	22%	4	22%	18
Minor Physical	3	50%	1	17%	2	33%	6
Threats Only							
Friends	22	54%	6	15%	13	31%	41
All Assaults	15	54%	4	14%	9	32%	28
"Serious" Physical**	5	56%	1	11%	3	33%	9
Minor Physical	2	50%	1	25%	1	25%	4
Threats Only							
Strangers	20	42%	10	21%	17	36%	47
All Assaults	5	50%	3	30%	2	20%	10
"Serious" Physical**	10	43%	4	17%	9	39%	23
Minor Physical	5	36%	3	21%	6	43%	14
Threats Only							
Unknown Relation	14	48%	3	10%	12	41%	29
All Assaults	8	42%	1	5%	10	53%	19
"Serious" Physical**	4	80%	1	10%	0	0%	5
Minor Physical	2	40%	1	20%	2	40%	5
Threats Only							
All Relation	95	49%	38	19%	60	31%	193
All Assaults	52	52%	20	20%	28	28%	100
"Serious" Physical**	31	48%	12	19%	21	33%	64
Minor Physical	12	41%	6	21%	11	38%	29
Threats Only							

**"Serious" physical harm involved beatings, cuts in the head, attempted rape, and being hit in the head with objects. Being pushed, having hair pulled, etc., and being hit in less vulnerable areas were considered minor physical injury.

*"Violent attacks" include all kinds of assaults and homicides, rapes, and child abuse cases. I have excluded cases in which the "victim" was a Public Safety officer attacked while intervening in a situation.

One might expect the presence of alcohol in an attack situation to increase the level of injury that results. For the most part, Table 8 does not lend support to this idea. The only place where one can observe alcohol increasing the probability of serious injury is among spouses. There alcohol does seem to increase the probability of a serious physical injury. Moreover, we can investigate whether alcohol tends to exacerbate the seriousness of the attack by looking at the most serious attacks separately and observing how often alcohol is involved in those attacks. Table 9 presents the data on the role of drunk offenders in the most serious offenses. Here we see that drunk offenders are much more common than in the ordinary cases of assault. These data are consistent with the notion that alcohol can exacerbate the seriousness of attacks and confrontations among individuals.

Beyond the issue of whether alcohol makes attacks and confrontations more dangerous is the issue of whether alcohol changes the character of the attacks. Specifically, one wonders whether the presence of substantial drunkenness in Barrow has allowed the violence to break out of the circle of family and friends and into the wider society. Obviously, when attacks involve strangers and become increasingly inter-racial, something very important has happened to the social relations in the community. Fortunately, a series of analyses designed to investigate this issue produced negative results. Table 10 reveals that there has been no trend in the direction of increasing the share of attacks between strangers in the overall pattern of violent attacks. Table 11 reveals that inter-racial and intra-racial attacks among strangers are similar in terms of alcohol involvement both with respect to one another, and with respect to the overall pattern of assaults. So alcohol seems not to have changed the basic nature of violent attacks in Barrow: they continue to be concentrated among family and friends.

Table 9

The Role of Drunk Offenders in
 Serious Violent Crimes:
 1976-1978

Status of Offender Offense	Total		Drunk		Probably Drunk		Apparently Not Drunk	
	N	%	N	%	N	%	N	%
Child Abuse and Neglect	12	(100%)	8	(67%)	3	(25%)	1	8%
Rape	9	(100%)	7	(78%)	0	(0%)	2	22%
Homicide	1	(100%)	1	(100%)	0	(0%)	0	(0%)
Total	11	100%	16	(73%)	3	(14%)	3	(14%)

Table 10

Relationships Between Defendants
and Victims in Violent Attacks
in Barrow: 1976-1978

(All Violent Attacks)

Relationship	1976		1977		1978	
	Number	% of known	Number	% of known	Number	% of known
Spouse	11	16%	5	10%	12	26%
Relative	23	34%	15	31%	10	10%
Friend	19	28%	11	22%	11	23%
Stranger	15	22%	18	37%	14	30%
Subtotal	68	100%	49	100%	47	100%
Unknown	3		19		7	
Total	71		68		54	

Table 11

The Role of Drunk Offenders in
Violent Attacks Among Strangers

(All Violent Attacks: 1976-1978)

Character of Offense	Total	Drunk		Probably Drunk		Apparently Not Drunk	
		No.	%	No.	%	No.	%
All attacks involving "strangers"	76	35	(46%)	12	(16%)	27	(36%)
<u>Inter-racial</u> attacks among strangers	36	13	(36%)	9	(25%)	14	(34%)
<u>Intra-racial</u> attacks among strangers	8	3	(38%)	1	(13%)	4	(50%)
Attacks on Public safety officers	30	19	(63%)	2	(7%)	9	(30%)

In sum, then, alcohol does seem to fuel violence generally, and to exacerbate the seriousness of the crimes, but it has not altered the basic pattern of intra-family, intra-racial violence. In fact, the data in Table 8 suggest that an offender who attacks a stranger is much more likely to be sober and to attack with mere threats than offenders who attack family and friends.

2.2.3 The Impact of Alcohol on Role Fulfillment and Social Functioning

The third area in which one might expect alcohol to be producing important effects is the broad area of "role fulfillment" and "social functioning." As noted above, frequent, unpredictable periods of drunkenness may disable the drinker from meeting the needs, demands and expectations of people who depend on him on a daily basis. A spouse may feel neglected. Children may take advantage of parental neglect. And an employer who expects reliable attendance and competent performance may begin to feel that he is not getting his money's worth. As these social "intimates" become disappointed and angry, and as the evidence of unreliability and incapacity mounts up, the drinker's self-esteem will deteriorate. This, at least, is the usual expectation about what happens to drinkers in the "lower 48."

Unfortunately, no data are now available (or easily gathered) in Barrow that would allow us to see clearly whether drinking is producing these effects. We could look at divorces to see if spouses become disappointed, but my impression is that the institution of marriage doesn't have the same status in the Inuit culture as it does in the culture of the "lower 48." Similarly, we could look at data on school dropouts and attendance problems to see if children of hard drinking parents were experiencing greater difficulties, but the data were unavailable from

the school. Finally, we could look at job attendance and performance figures, but, again, the data from employers such as Naval Arctic Research Lab, Blackstock, North Slope Development Corporation, and the Borough Government were either non-existent or unavailable to us.

Still, the general impression one gets from simple observation and talking to people in Barrow is that the social and cultural environment is quite tolerant of drinking and the erratic periods of incapacity that it creates. In the traditional activities of the Inuit, a great deal of discretion existed as to when one would do the tasks required of survival. Moreover, a great deal of "free time" existed when it was impossible to do anything except socialize and wait for the weather to improve. The Inuit have surrendered this tradition of discretion over the use of their time only grudgingly. As a result, the institutions have been forced to adapt. In fact, schools, churches and employers have adapted their schedules to allow both predictable and unpredictable interruptions associated with hunting, the weather and other traditional interruptions. The implication of these arrangements for the nature of the alcohol problem in Barrow is that there is a great deal of "room" within which people can drink and get drunk. In short, plenty of "social room" for temporary incapacity existed in the traditional Inuit society, and the modern institutions that have descended on Barrow have also been forced to provide room -- not specifically to allow drinking and drunkenness, but simply to accommodate themselves to the traditional pattern of using time in a discretionary way.

Thus, by our standards, drinking may be occurring at a level that would produce disappointment among people who depended on the drinker. But by the traditional standards of the Inuit, there may not be a problem. The expectations that would lead to disappointment simply

don't exist. Of course, the fact that people aren't disappointed and don't perceive a problem doesn't mean that there isn't an objective problem for the community. It may be that families are suffering real losses in their abilities to socialize children and make life seem meaningful to the individual members. It may also be that the economic capacities of the town are being depreciated by alcohol. But if these objective changes are happening, it is as difficult for us to see it as it is for the community. We bring our own prejudices, but the community has not yet developed theirs. As a result, the social and economic environment is particularly hospitable to people who get drunk often.

2.3. Summary

In sum, drinking and drunkenness do seem to be placing a heavy burden on the Barrow community. A great deal of drinking occurs throughout the population, and a relatively large fraction of the population seems to be involved in fairly heavy use patterns. Moreover, when this pattern of consumption occurs in the social, psychological and physical environment of Barrow, some bad things begin to happen to drinkers, to people who depend on drinkers, and others. For one thing, drinkers tend to die much earlier than they should. Related to this observation is the fact that drinkers suffer a high rate of morbidity, and consume a large fraction of the available medical resources. In addition, drinkers seem to contribute disproportionately to the overall level of violence in the community. We don't know, of course, what fraction of the attacks would occur if people weren't drunk. But it seems likely that the overall level of violence would diminish if there was less drinking, and virtually certain that the seriousness of the attacks would decrease. Finally, it may be that drinking is weakening family structures and limiting the

economic potential of the town, but there is no clear evidence of this, and people's perceptions (apart from our prejudices do not support this view. In fact, since the community seems quite tolerant of high levels of drinking, the usual predictable pattern of disappointment among people who depend on drunks and resulting low self-esteem among the drunks simply does not occur. In reviewing these observations, one is struck by how much of "the alcohol problem" in Barrow depends simply on "drunkenness" coinciding with a hostile environment and a dangerous psychological mood. Very few of "the problems" seem to depend on an individual being drunk repeatedly. Of course, we may begin to see health problems associated with chronic alcohol use if we manage to keep people from dying so young. In addition, social problems from chronic alcohol use may begin appearing within families and economic units of the town. But currently in Barrow, the alcohol problem is less one of chronic drinking and alcoholism than it is of drunkenness in a dangerous physical and psychological environment. It is a problem of trauma, accidents and violent attacks.

3.0 The Detention Program

3.1 Strategic Aspects of a Detention Program in Barrow

If the alcohol problem in Barrow is primarily one of drunkenness in an inhospitable environment rather than alcoholism eroding the health and social status of the alcoholic, then a "protective custody" or "detention" program ought to have significant potential for controlling the problem. If the surveillance system linked to the detention program finds a large fraction of the episodes of incapacitating drunkenness, if sufficient capacity exists to respond to all the cases, and if the detained people can be kept safely until they sober up, the crucial link between drunkenness, accidents and assaults will be relieved of a substantial portion of the alcohol problem -- all at the price of inviting the Public Safety Office to exercise greater control over the private lives of the citizens of Barrow.

Of course, this option of "protective custody" for drunks is widely available in the "lower 48" as well (despite the movement to de-criminalize" public drunkenness). In the "lower 48," however, the basic trade of increased safety for drunks at the price of increased police surveillance and control is ordinarily considered a bad bargain. Partly this is a matter of difference in values. But it also seems clear that the objective nature of this trade is different in Barrow than it is in urban areas in the "lower 48." One major difference is that the objective risks of being drunk in Barrow are probably much greater than in the "lower 48. Of course, since the chance of serious trauma (e.g. accidents, exposure, fire, assaults, suicides) given drunkenness is relatively low everywhere, one must inevitably "detain" a great many drunks

to prevent one serious traumatic event. But, since the probability of a serious traumatic event, given drunkenness is much higher in Barrow than in the rest of the U.S., fewer drunks must be detained to prevent any given number of serious traumatic events. Thus, the very hostility of the environment in Barrow makes the detention program a more attractive option than it would be in New York City, Los Angeles, or Detroit.

A second major difference influencing the relative attractiveness of the trade is that the Public Safety Office in Barrow has a noticeably different mission than the ordinary municipal police department, and is perceived somewhat differently by the community. Superficially of course the Public Safety Office has the usual aura of a police department. The officers are predominantly white in a predominantly Native community. They wear guns and uniforms and drive around in visible, powerful looking vehicles. The difference, however, is that the Public Safety Office both thinks of itself as being (and in fact is) more in the business of preventing traumatic deaths and injuries than in "enforcing laws." It has responsibility for fires, emergency medical services and search and rescue as well as for law enforcement. And in a community where crimes are generally easily solved because everyone knows one another and the offenders feel duty bound to confess, the function of protecting public safety is likely to be the more interesting and challenging task. (In this regard it is interesting to note that the requirements for training in medical procedures within the personnel system of the Public Safety Office are much more demanding than for enforcement procedures such as investigation.) Since the functions differ significantly, and since the Inuit have not inherited the Lockean tradition of being

suspicious of governmental power in any form, the community does not seem to regard the Public Safety Office as a threatening force. After all, in a community of 2500 people living in very close quarters and locked tightly together in extended kinship patterns, there may be very little privacy left to surrender. The Public Safety Office's social control capabilities will always be relatively small compared to the potential that exists in the existing social structure of the community.

favorable configuration of benefits and costs than they would present in the "lower 48." Of course, there is some potential for abuse in the management of this program. And it is by no means certain that the program will succeed in controlling much of the alcohol problem. Hence, it is important to learn exactly how the program is operating and what its effects on "the alcohol problem" are. Such inquiries are the purposes of the sub-sections presented below. But the point of this sub-section is that our usual prejudices about police involvement in detaining drunks may have to be adjusted to accommodate the different circumstances that exist in Barrow.

3.2 The Operations of the Detention Program

Perhaps the most significant fact about the operations of the detention program is its phenomenal growth. Table 12 presents data on the number of detentions made by the Office of Public Safety in the context of two other indicators of workload for the Department: the volume of "service requests," and the number of (adult) arrests. Inspection of this table reveals that in the first few months of operation, the detention program averaged about 1 detention per day. By the last quarter of 1977, however, the program was averaging 3 detentions/day, and it stayed at this level throughout 1978.

Table 12
 The Growth of the Detention Program
 (In Both Absolute Terms, and as a
 Share of Total Workload)

Month/year	1976												1977												1978												Total M					
	J	F	M	A	M	J	J	A	S	O	N	D	Total M	J	F	M	A	M	J	J	A	S	O	N	D	Total M	J	F	M	A	M	J	J	A	S	O		N	D	Total M		
1.0 "Service Requests" (includes borough)	116	116	181	202	201	118	210	190	203	170	215	162	2311	186	116	296	361	352	360	501	395	653	391	367	406	650	4666	187	357	356	519	461	376	660	682	680	477	337	530	581	5390	469
2.0 Detentions (includes borough)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	19	26	28	37	35	48	63	102	80	88	569	50	115	70	106	97	86	68	96	83	87	91	103	161	1131	96
Fraction of service requests	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0%	8%	6%	7%	8%	7%	9%	11%	16%	28%	20%	17%	13%	12%	20%	20%	26%	21%	15%	20%	17%	17%	28%	20%	27%	21%	21%	
3.0 Arrests:	15	5	14	35	36	17	62	63	63	25	8	16	719	27	26	9	18	20	3	15	19	23	21	21	15	18	208	17	18	24	27	27	16	26	28	11	20	11	23	18	253	21

(More recent data indicates this rate is even higher now.) The table also indicates that the program has become a larger portion of the overall activity of the Department. Detentions averaged around one tenth of all service requests through most of 1977 and then grew to about a fifth during the last months of 1977 and stayed about that level throughout 1978. Thus, from 1976 to 1978, the Public Safety Office in Barrow was becoming increasingly busy (except for arrests), and increasingly pre-occupied with operating the detention program.

Two broadly different alternative explanations are available to account for this substantial growth. One explanation is that "drunkenness" in Barrow has increased significantly over the last two years and that the capacities of the program to detect and respond to drunken episodes have remained constant. The alternative explanation is that "drunkenness" has remained more or less steady and that the program's "effectiveness" in discovering and responding to drunken disturbances has increased dramatically. If the explanation for the growth of the program lies in the increased "effectiveness" of the program, it becomes important to know exactly how the program's capacity to detect and hold drunks in protective custody is developing. One possibility is that the program is being used by the Public Safety Office, the owners and proprietors of "public buildings" (such as the hotel, store and apartment buildings), and "responsible citizens" to control the unruly public behavior of drunks who venture out of their houses. A second possibility, however, is that the program is being used by people who have difficulty in controlling the behavior of friends and relatives who get drunk in their houses, and are now inviting Public Safety Officers into their houses to assist them.

The currently available evidence does not allow us to say with absolute confidence whether the growth in the detention program is accounted for by a dramatic increase in drunkenness or by a dramatic improvement in the "effectiveness" of the program. Still, I would be prepared to place fairly heavy odds on the hypothesis that drinking has remained more or less steady during those years, and that the growth in the detention program is accounted for primarily by a dramatic increase in its effective reach within the community. I base this judgment on several observations.

First, the indications of alcohol abuse that are available in Barrow apart from the detention program do not reveal a growth in drinking activity comparable to what we observe in the detention program over this period. Table 13 presents evidence on the growth of "alcohol related" out-patient visits and in-patient treatment against the evidence on the growth of the detention program. Given that the PHS Hospital has been operating more or less consistently in the Barrow environment for at least the last 5-10 years, and that the detention program is brand new, the figures on alcohol related out-patient and in-patient visits are more likely to be a consistent indicator of levels of drinking. While these numbers indicate some growth, it is nothing like the growth observed in the detention program.

Second, we know that the community liquor store was closed during calendar year 1978. The closing of this store was almost certainly offset to some degree by an increase in private orders for alcohol and "bootlegging." But it is a little hard to believe that the loss of the community liquor store making an average of approximately 300 transactions day with the average transaction involving a quart of distilled liquor would be more than offset by the expansion of the private order and bootlegging sector. The overall supply of alcohol in the community during 1978 almost certainly had

Table 13

The Growth in the Detention Program Compared
 With Changes in the Alcohol Related
 Demands for Medical Services

	<u>1976</u>		<u>1977</u>		<u>1978</u>		<u>% Change</u>
	Number	% Change	Number	% Change	Number	% Change	1976-1978
<u>Detention Program</u>	0	(NA)	549	(NA)	131	(+106%)	NA
 <u>Alcohol Related</u>							
<u>Demands for</u>							
<u>Medical Services</u>							
In-Patient Care	67	(NA)	38	(-43%)	50	(+32%)	(-25%)
Out-Patient visits	1,099	(NA)	1151	(+5%)	1173	(+2%)	(+7%)

Table 14

The Role of Disturbances, Fights and Drunken People
in Requests for Services: 1976 and 1978

	<u>March 76</u>	<u>Nov. 76</u>	<u>March 78</u>	<u>Nov. 78</u>
Total Service Requests * (Entire borough)	201	235	376	520
Service Requests Involving Drunks, Disturbances or Fights**	No. 60	86	164	204
% of Total Service Requests	30%	37%	44%	39%
Detentions ** (Barrow only)	No. 2	4	75	109
% of Service Requests Involving Disturbances	3%	5%	46%	53%

* From Moeller Report. Service Requests from all villages.

** From Analyses of Service Requests
for Barrow. Several detention/incident.
Perhaps some from outside Barrow

the subject of police concern (e.g. stranger, acquaintance, relative or spouse); 2) the relationship of the caller to the "offending activity" (whether he was a victim or a witness); 3) the place in which the offending behavior was occurring (e.g. the street, a private residence, or a public building); and 4) the disposition of the call (e.g. gone on arrival, dispersed or resolved at the scene, detention, or arrest). In some cases, this information was neither directly available, nor inferrable from the facts of the situation. Such observations were deleted from the analysis.

Table 15 presents the data on the circumstances that led to an appeal for police help in the two months of 1976 contrasted with the same two months for 1978. The circumstances are arranged in order of my sense of the degree of "intrusiveness." The on-view intervention by a Public Safety Officer seems the most intrusive; efforts by (largely white) managers of public buildings to maintain order seem almost as "externally imposed" as the Public Safety Officer intervention; nosy (even if well intentioned) observers of the street only slightly less justified; etc. Towards the bottom of the list, we have situations where the police are being invited into the midst of very private events -- relatives calling the police to help them control friends and relatives in their own houses. At the very bottom, we have people turning themselves into the police. In these cases, there can be little doubt that the action is voluntary and justified. Examination of this table leads to several important conclusions

First, it emphasizes a fact we have already noted: the Department of Public Safety is being called to intervene in disturbances, fights and troublesome situations much more often in 1978 than in 1976. In fact total

Table 15
Sources of Complaints for Disturbances
(1976-1978)

	1976 (March, Nov.)			1978 (March, Nov.)			1978 Increase	
	Number	% of all Incidents	% of Incidents	Number	% of Incidents	Number	Times	
1. Public Safety Officer: Over-the-Phone	1	1%	2%	31	9%	10%	+29	15.5x
2. Strangers Maintaining order in Public Buildings	16	14%	15%	5	16%	18%	-5	3.0x
3. Bystanders (Strangers) Alerting Police to Events on Street	15	12%	13%	39	12%	13%	+24	2.6x
4. Victim Strangers Alerting Police to Events on Street	4	3%	3%	1	0%	0%	-3	0.25x
5. Bystanders (Acquaintances and Relatives) Controlling streets and Public Buildings	8	6%	7%	28	8%	9%	+20	3.5x
Sub-total (Public control)	47	38%	40%	153	45%	51%		3.3x
6. Acquaintances (both bystanders and victim) alerting Police to Problems in Residences	45	36%	38%	67	26%	29%	+42	1.9x
7. Bystanders (Relatives) alerting Police to problems in Residences	16	13%	14%	20	8%	9%	+10	1.6x
8. Victims (Relatives and Spouses) alerting Police to trouble in Residences	8	6%	7%	29	9%	10%	+21	3.6x
Sub-total (Assist private control)	69	55%	58%	142	42%	47%		2.1
9. Self referrals	2	2%	2%	5	1%	2%	+3	2.5
Sub-total	118	94%	100%	300	89%	100%		2.5
10. Other sources of complaints	7	6%		37	11%			5.3
11. Total incidents	125	100%		337	100%			2.7

calls of this type have nearly tripled in 2 years! While this might reflect a dramatic change in the general level of rowdiness in the community, a change of this magnitude seems much more likely to have resulted from a change in the willingness of the community to ask the Department of Public Safety for help.

Second, the overall pattern of calling for help is shifting slightly. It has changed from a situation where calls to assist private individuals maintain order in their homes against friends, relatives, and spouses predominated (58% in 1976), to one where calls from relatively remote people who want to maintain order in public places have edged up to slightly more than half the calls (51% in 1978). This is a noticeable but slight shift in the composition of circumstances under which the police are mobilized.

Third, despite the trend towards "public control," the largest single source of requests for police help in 1976 and 1978 involved people asking for assistance in controlling the behavior of acquaintances in their own houses. Moreover, from 1976 to 1978, this category accounted for the largest increase in the absolute number of referrals. As one reads through the incidents documented in the requests for service, observes the town, and learns of both traditional forms of socializing and the current norms governing drinking, the fact that residents of Barrow experience difficulty in controlling their guests is not surprising. After all, in traditional Eskimo culture, people moved freely from house to house to socialize. A knock at the door was not obligatory. Moreover, under current conditions of alcohol supply, parties seem to spring up and move in response to the availability of liquor. A bottle is opened and emptied until the supply at a given location runs out.

Thus, the experience of many people in a household is to have groups of drunken people descend on them, drink some more, and become so intoxicated that they are unwilling to leave. Since the houses are very small, this becomes a problem at least for the sober members of the household, and ultimately even for the host who is also probably drunk. Rather than risk a fight (the women, old people and children who may want to sleep would be no match for the young, male drunks), the Public Safety Office is called. While somewhat stereotyped, this situation does seem to occur often in Barrow - probably more than once or twice a day.

Fourth, apart from these situations of hosts trying to control guests, the most dramatic growth in the program has resulted from strangers being mobilized to control public spaces. On-view intervention by Public Safety Officers, calls from managers of public facilities (e.g. the hotel, the store, the school, the new apartment buildings), and calls from people who see people in trouble on the streets have driven the "public control sector" up to become more than half of all the calls.

Thus, the analysis reveals that the program is being increasingly used by a great many different segments of the community for a variety of purposes. Perhaps surprisingly, the different kinds of claims have grown more or less proportionately. While the fastest growth has been in the categories of "public control" rather than assisting private control, a very large absolute increase in the demands for help in controlling guests in private residences has kept the two main categories of use roughly balanced. While there is some reason to fear the program is being used as an instrument of "external social control," the community is finding a use for it even in its most private and intimate pursuits.

So far, the analysis has concentrated on how the Public Safety Officers are called to the scene. It is also useful to investigate what they do when they arrive. How has the existence of the "protective custody" option affected their decisions at the scene? Do some kinds of situations seem to put more pressure on an officer, leading to a higher probability of detention than others? If so, which situations are the most demanding?

Table 16 presents data on the outcomes of the calls whose sources were analyzed above. Again, inspection of this table suggests some important conclusions.

First, if we look at the differences between 1976 and 1978 we see (not surprisingly) that the existence of the detention program has made an enormous difference in the way that the Public Safety Officers respond to calls involving fights, disturbances, and troublesome drunks. Detentions have increased from 5% of the total incidents (with arrests at 5%) to 53% of the total incidents (with arrests reduced slightly to 3%). Thus, detentions have become the predominant mode of dealing with "disturbances." "Gone on arrivals" and "quiet on arrivals" appear to have decreased in relative importance largely because the calls from strangers regarding events in the streets and public buildings seem a little difficult for the police to handle: since the caller is a stranger and the location is public, there is a greater chance that the "troublemaker" will pass on and less chance for the caller to control his behavior than in the more intimate settings. The "dispersals" or "resolutions of the scene" have held steady as an absolute number, but dropped significantly as a fraction of all detentions. It is almost as if the detention represented "new business." But I think a more likely explanation is that the police are being called into a much larger number of situations; are choosing among "resolution at the scene,"

Table 16

The Outcomes of Calls for Assistance
from the Public Safety Officer
(By Source of Complaint)

	1976 (March, Nov.)				1978 (March, Nov.)			
	Total No.	All Quiet or Gone on Arrival No.	Dispersed or Resolved at Scene No.	Total %	All Quiet or Gone on Arrival No.	Dispersed or Resolved at Scene No.	Total %	Arrested No.
1. PSO: On view	2	0	0	100%	0	0	100%	1
2. Strangers Maintaining order in "public" buildings	18	3	14	100%	12	9	100%	1
3. Strangers (Bystanders) alerting police to events on street	15	8	7	100%	12	9	100%	0
4. Strangers (Victims) alerting police to events on street	4	1	3	100%	0	0	100%	0
5. Bystanders Identifying acquaintances and relatives creating problems in streets and in public buildings	8	2	6	100%	10	11	100%	0
Sub-total (Public control)	47	14	30	100%	35	32	100%	2
6. Acquaintances (By- standers and victims) alerting police to problems in residences	45	12	31	100%	15	24	100%	0
7. Relatives (Bystanders) alerting police to problems in residences	16	4	7	100%	3	7	100%	0
8. Relatives (victims) alerting police to problems in residences	8	2	5	100%	4	10	100%	0
Sub-total (Assisting pri- vate control)	69	18	43	100%	22	41	100%	0
9. Self-referrals	2	0	1	100%	2	0	100%	0
Sub-total	118	32	74	100%	59	73	100%	2
10. Other	7	2	5	100%	5	12	100%	7
11. Total incidents	125	34	79	100%	64	85	100%	9

"detention," and "arrest;" and are picking detention at the expense of arrests (where there is a small drop in the proportion and the absolute number) and "resolutions" (where there is a large drop in the proportion -- from 63% to 25% -- and only a slight increase in the number -- from 79 to 85).

Whether one regards this dramatic change in disposition as beneficial or not obviously depends on how attractive one considers detention to be as compared with arrest on one hand and resolution at the scene on the other. I suppose we would all regard the decrease in the number and proportion of instances that result in arrest as an obvious improvement. But this is a small effect. The real issue is how we feel about "resolution at the scene" versus "detention" since that is where the big changes occur. Intuitively, I think we prefer "resolution at the scene" since it seems less "costly" in terms not only of resources, but also in terms of reliance on state power. We generally prefer informal accommodations to state mandated resolutions. The argument on the other side, however is that "resolution at the scene" did not in fact resolve the situation. The same situation would recur, and the potential for traumatic events would persist. Hence, nothing was in fact being "resolved" at the scene. We will save the issue of whether the detention program is reducing serious traumatic incidents until the next section. But it is worth pointing out here that my research into the "requests for service" did not reveal many instances where a situation flared up again after it had supposedly been settled. Out of slightly more than 400 incidents I reviewed in both 1976 and 1978, only 16 were incidents that required more than one police intervention, and only two of them required more than two police visits. So in the vast majority of cases, situations that were resolved at the scene stayed resolved.

The second important observation to be gleaned from this table is that once one leaves out the instances where the police show up late (e.g. the cases involving "gone on arrival" or "quiet on arrival"), it becomes fairly clear that the "surest" route to detention is to be picked up by the Public Safety Officer, or to become offensive to a person trying to maintain order in a public building. Table 17 presents data on the "propensity to detain" for the different sources of complaints which supports this statement. Again, however, the tendency of the program to become a public order maintenance program is mitigated by the tendency of the police to use detention in cases where they have been mobilized and directed by private people trying to control the behavior of friends and relatives. These incidents are only slightly less likely to result in a detention than the public order incidents, and the incidents contribute more in absolute numbers to the detention program than the most remote public order incidents.

In sum, then, the existence of the detention program has radically affected police responses to disturbances. Detention has become their predominant mode of coping with disturbances. Obviously detention can never become their only mode since many disturbances will continue to occur that do not involve drunken, incapacitated people. But the growth of the program is quite astonishing. Virtually all of that growth has come at the expense of "resolutions at the scene." Whether one regards that as favorable or not depends on how one feels about the use of detention. I pointed out that a common argument in favor of detention (that it ends recurrent disturbances) is not so strong since recurrent disturbances turn out to be relatively rare. Moreover, the finding that detention is most likely when the police have intervened themselves or have been summoned by

Table 17
 Propensity to Detain
 (By Source of Complaint)

	Ratio of "Detentions" to "Resolutions at the Scene"	Number of Detentions
1. Public Safety Officer: On-view	9.0	27
2. Strangers Maintaining Order in Public Buildings	3.6	32
3. Strangers Alerting Police to Events on Street	1.9	17
4. Strangers-Victims Alerting Police to Events on Street	NA	1
5. Bystanders Identifying Acquaintances and Relatives Creating Problems in Public Space	0.63	7
Sub-total: Public Order Maintenance	2.6	84
6. Acquaintances Alerting Police to Problems in Residences	2.0	48
7. Relatives Alerting Police to Problems in Residences	2.3	16
8. Relatives (Victims) Alerting Police to Problems in Residences	1.5	15
Sub-total: Assistance to Private Order Maintenance	1.9	79
9. Total Incidents *	2.1	179

*Doesn't represent some of columns because other categories are missing, e.g. "self-referred" and "other".

the proprietor of a public building makes us worry that the external control aspects of the program are quite pronounced. On the other hand, however, the fact that the program has expanded (with a large component of that expansion coming from private people using it for their purposes) indicates that at least some people in the community value and use the program. Moreover, detainees routinely told us that they were grateful for the program. So it remains unclear how we should regard the detentions. I suspect the decisive issue for most people is whether the detentions seem to be reducing violent deaths related to alcohol. It is to this issue we turn next.

3.3 Evaluating the Impact of the Detention Program

To the extent that drunkenness is contributing to traumatic deaths and violent attacks in Barrow, and to the extent that the detention program is locating and capturing a large fraction of the potentially dangerous episodes of drunkenness, overall levels of traumatic deaths and violent attacks should be decreasing in Barrow. Moreover, to the extent that the overall levels of these events are being controlled by the detention program (and not some other factors), those events that involve alcohol should be reduced by more than the average change in the overall level.

Unfortunately, while initial descriptions of the program seemed to indicate substantial success in reducing traumatic deaths and violent attacks, the data I was able to gather and analyze do not support this conclusion. In fact, it is not clear that the overall level of these events has been reduced, and even if we pretend to see an effect on the overall levels, the greater reductions seem to occur in the non-alcohol related events. The data are presented below.

Table 18 presents the data on deaths from acute alcohol poisoning and traumatic causes among Eskimos in Barrow from 1975-1978 -- spanning the time that the detention program was initiated and reached a high level of activity. Inspection of this table indicates that there has been no significant change in the level of these deaths since the detention program began. The overall level remains about the same, the acute alcohol deaths remain the same, total traumatic deaths are the same, etc. No change is apparent. Even if we ignore 1977 as a year in which the program was just started and judge the effects only by the difference between the average of 1975 and 1976 and what we observe in 1978, the differences are not apparent. Table 19 presents the results. An apparent drop in traumatic deaths seems to be the result of a decrease in the non-alcohol related traumatic deaths. Of course, the data I used for this analysis was the file of death certificates kept by the Coroner's Office. These files may be incomplete. And there may be information available to the Public Safety Office about these deaths that was not available to me. But these tables are accurate recordings of the information I had available. Based on this data, my best judgment (based on conservative standards of what constitutes an "alcoholic death") is that the detention program has not yet reduced deaths.

Table 20 presents the data on violent attacks. Here, again, the results are a little disappointing. There is an apparent decrease in the overall level of violent attacks, but since the change seems more pronounced in the non-alcohol involved incidents, it is difficult to attribute this effect to the operations of the detention program. Of course, again, the data may be flawed. Moreover, I have analyzed the data differently

Table 18
 Traumatic and Alcohol Deaths Among
 Natives in Barrow
 (All Ages: 1975-1978)

	1975			1976			1977			1978			Total Post Detention							
	0-14	15-40	>40	0-14	15-40	>40	0-14	15-40	>40	0-14	15-40	>40	0-14	15-40	>40	Total				
Total Rate	0	5	3	2	4	0	6	2	7	3	14	2	8	2	12	4	3	10	3	16
Acute Alcohol: Total	0	1	1	0	0	0	0	0	1	1	2	0	2	0	2	1	0	2	1	3
Traumatic Deaths: Total	0	4	2	2	4	0	6	2	8	2	12	2	6	2	10	3	1	8	2	13
Alcohol Involvement: Yes: Total	0	1	2	0	1	0	1	2	2	2	4	0	1	0	1	2	0	2	0	3
Rate																				
BAC > 0.2	0	1	0	0	0	0	0	1	1	0	1	0	1	0	1	1	0	1	0	2
BAC < > 0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Unk BAC	0	0	2	0	1	0	1	1	1	2	3	0	0	0	0	0	0	0	0	0
Probable	0	0	0	0	1	0	1	1	1	0	1	1	0	1	2	0	0	0	0	1
Apparently Not	0	3	0	2	2	0	4	2	5	0	7	1	5	1	7	1	0	0	1	8
Total Alcohol Deaths Rate	0	2	3	0	2	0	2	0	4	3	7	1	3	1	5	2	1	5	2	9

Table 19

Analysis of Levels of Traumatic
Deaths Before and After Detention (Ignoring 1977)

	Average of 1975-1976	1978
Total	7	4
Acute Alcohol	1	1
All Traumatic Deaths	6	3
Definite Alcohol	2	2
Probable Alcohol	0.5	0
Apparently not Alcohol	3.5	2
Total Alcohol Deaths	3.5	3

Table 20

Violent Attacks: 1976-1978
 (Includes All Violent Attacks Except Those
 Where PSO Was Victim)

Year Kind of Assault	1976 (Pre-Detention) Number	1977 Number	1978 (Post Detention) Number
All violent attacks	71	68	54
Drunk Offenders	20	41	28
Probably Drunk Offenders	14	17	7
Sub-total:	40	58	35
Probably not Drunk Offenders	31	10	19

than would ordinarily be the case. The most significant changes were:

- 1) removing all the incidents in which Public Safety Officers were the "victims," (this eliminated 21 assaults in 1976 which would have made the change in the program seem large); and 2) collapsing all the different kinds of assaults (including rape, homicide, child abuse, etc.) into one aggregate category. The justification for excluding assaults on PSO's is that these usually occur when the PSO intervenes; it is not an attack that can be controlled by a drunk detention program. The justification for lumping all the different kinds of assaults together is that the distinctions among them are often a little arbitrary and the result of accidental features of the situation (such as the availability of weapons) rather than neatly separable behavioral events. Besides, the serious attacks are so rare that their inclusion doesn't affect the overall statistics much one way or the other. So, while I might be basing these analyses on inadequate data, my conclusion (again based on conservative standards of what constitutes alcohol involvement and what must be shown to reveal a genuine effect) is that the detention program does not appear to be reducing levels of violent attacks.

Beyond the issue of whether the detention program is or is not reducing traumatic deaths and violent assaults is the more subtle question of how the program is affecting general community attitudes towards drinking and being drunk. There are many possibilities here. On one hand, the existence of the program provides a kind of safety net or insurance policy to drinkers. As long as the program is working well, a drunk need not fear freezing, death by fire, nor even suicide. Hence, in some sense, the program

encourages drinking. On the other hand, it may be a little ignominious and uncomfortable to end up in one of the detention cells. It is frustrating to have to depend on others for food, going to the bathroom, etc. And the cells are probably not as comfortable as being at home. Consequently, the prospect of detention may not be entirely pleasant. My guess is that the current program does very well in striking the balance between "softening" and "hardening" the environment for drinking in Barrow. It is welcoming enough to absorb many drunks and secure enough to keep them from harming themselves and others, but sufficiently austere and ignominious that the experience joins the hangover as an important deterrent to being drunk often.

Thus, it appears that the detention program has not yet begun to produce the effects on traumatic deaths and violent attacks that were anticipated. Still, the basic design and operation of the program seems sound and potentially valuable to the community. Perhaps it has to double again in size to reach a scale where it is capturing a large fraction of the drunken episodes that would turn ugly but for the detention program. It may simply be harder to control traumatic deaths and violence through this program than originally anticipated. This raises the question of how this program might be improved, and what other things the community might consider doing to help control the alcohol problem in Barrow.

4.0 Alternative Approaches to the Alcohol Problem in Barrow

In thinking about useful, additional steps the community might take to control the alcohol problem in Barrow, it is helpful to think of possibilities in three major categories: 1) maintaining and improving the program of protective custody; 2) affecting the availability of alcohol in the community; and 3) creating new social norms governing drinking behavior. In addition, it is useful to reflect on how these proposals might fit into an overall strategy for Barrow.

4.1 Possible Changes in the Detention Program

Since our evidence does not clearly indicate that the detention program has produced a reduction in traumatic deaths and physical violence, a question arises about whether it should be continued. If the program were very expensive or were being used in a way that threatened the civil liberties of citizens of Barrow, one might be tempted to abandon it. But the situation appears to be one where the program has real potential to help ameliorate the situation, and where it is not currently managed in an offensive way. Moreover, given the importance of the alcohol problem in Barrow and the limited amount of public resources currently being applied to the problem, the detention program does not seem to be too costly. Thus, I think it would be unwise to discontinue the program now.

What should be done with the program is to improve it: to increase its effectiveness in reaching into the community, and to take steps to insure that the program is neither a heavy burden, nor unfairly administered in Barrow. Note that these two goals are quite compatible. If the program is decently and fairly managed, the community will embrace it and use it, thereby increasing its effectiveness. Specific steps include the following:

First, it is important to provide decent accommodations within the detention program. Locked areas and physical surveillance may be essential to guarantee security. But the areas in which people are held should be attractive, clean and moderately comfortable. Given current plans for a new public safety building in Barrow, these objectives should not be difficult to achieve.

Second, the program should be managed in a way that clearly indicates that the interests of the Inupiat community are being recognized and accommodated. The problem here is that the program was created and is now staffed and managed almost entirely by non-natives. This situation could be improved by more or less radical efforts to insure effective community control over the program. At one level, the Public Safety Office could simply create a Citizens Advisory Board to discuss policies and oversee operations. A slightly more aggressive effort to insure effective community participation would be to increase the proportion of Native Alaskans in the patrol force of the Public Safety Office. Perhaps the most radical idea is to separate the "protective custody program" from all the other programs of the Public Safety Office, and staff this program exclusively with members of the local community. Among these alternatives, I would recommend the least radical alternative - the creation of the citizens' advisory board. While it would be desirable to staff the protective custody program with more natives than are now involved, it does not appear that a sufficient number of suitable candidates is now available. Few Inupiat wish to join the Public Safety Office. Moreover, apparently those who do want to join rarely have sufficient social status to allow them to intervene effectively in conflict situations. For these reasons, the more radical possibilities for "community participation" do not appear to be feasible.

Third, the head of the Public Safety Office should take steps to insure that the program does not come to be used predominantly as an instrument of public order maintenance by (largely white) owners and proprietors of public buildings. A major device for insuring against this possibility is simply to keep track of who is using the program for what purposes and what are the outcomes of police intervention. In effect, the special analysis presented in this report should become a routine part of the administrative reporting about this program. In addition, it may become crucially important to establish an unambiguous standard of what constitutes a level of "incapacity" that justifies detention. Without such a standard, legitimate worries might arise about whom is being detained for what purposes.

Fourth, to the extent that the Public Safety Office can continue to be generally oriented towards safety and the prevention of traumatic injury and death rather than law enforcement, a protective custody managed by the Public Safety Office will be less onerous and more acceptable to the community. The "protective" aspects will naturally seem more salient than the "custody" aspects. The search and rescue program currently organized by the Public Safety Office is very important in this regard. It engages a large part of the native community because the program serves a purpose they understand well and draws on skills that are part of their heritage. And it is consistent with the objective of guarding the health of the population against the Arctic dangers. Additional programs that the Public Safety Office might take on to emphasize the safety orientation include: a course on drown-proofing (to the extent this is valuable in the frigid waters); emergency snowmobile repair; or fire prevention activities.

In sum, the detention program should be maintained and made more attractive to the community. Key components of making it attractive include: 1) maintaining decent and secure accommodations; 2) creating a

community advisory board; 3) preventing the program from becoming predominantly an instrument of public order maintenance; and 4) blending the protective custody program for drunks into a broader program to protect the community from traumatic death and injury. To the extent these steps succeed in making the program more attractive to private citizens in Barrow, the program should become increasingly effective in preventing traumatic deaths. If, after several years of this effort, however, beneficial effects on levels of traumatic deaths are not apparent, the tendency for the program to be used by "external forces of public order" increases, and it remains largely white in its staffing, it should probably be abandoned.

4.2 Controlling the Supply of Alcohol in Barrow

A second area in which governmental action might prove effective in ameliorating "the alcohol problem" in Barrow is regulating the availability of alcohol. The range of possibilities here is very broad. It runs from re-establishing local retail outlets for alcohol to seeking to prevent "bootlegging" - perhaps even to barring private purchases of alcohol from outside Barrow. In fact, since the routes into Barrow are so limited (e.g., a few planes a day and one ship in the summer) it seems that very tight control over the supply of alcohol would be technically possible. The problem, of course, is that the more tightly one seeks to regulate the supply of alcohol, the greater the possibility that an illegal market will be created. In addition, one can guess that the tighter the controls, the less politically acceptable will any given policy be. To be sure, tight controls can shrink the total quantity of alcohol flowing into Barrow, but they do so at the price of forcing a larger portion of that flow move through illicit channels, and staking governmental legitimacy and authority on an unpopular cause. Thus, one must choose an appropriate degree of

restriction that balances the benefits of restricting supply (less drunkenness and therefore fewer traumatic incidents) with the costs (illegal activity and weakened governmental legitimacy).

In making the judgment about the right place to strike the balance, one can work from several basic observations. First, it seems fairly clear that it would be a mistake to re-open the Community Liquor Store. Reasonable evidence exists to suggest that the existence of this local retail outlet increased levels of drunkenness and trauma dramatically. In fact, one could plausibly argue from the evidence that the existence of the store "caused" about four additional early deaths each year in which it operated. This is a very high price to pay. The only possible advantages of re-opening the store are to generate additional revenues for the town, or to avoid the emergence of an illegal supply system. Since the store will not be a particularly important revenue source, however, and since the illegal supply system that springs up to meet (some portion of) the demand previously met by the liquor store is not particularly large or pernicious, these advantages seem too small to justify re-opening. Leave the store closed.

Second, it will inevitably be difficult to control the illegal system that arises to meet the local demand for alcohol. In all probability, that system will involve individuals in Barrow making large personal orders for alcohol outside of Barrow (or personally bringing the liquor back from trips to Anchorage or Fairbanks), and then selling portions of their private inventory to other individuals in Barrow. Such action is currently illegal in Barrow, and cases have been brought against "bootleggers" without much success in gaining convictions at trial. The reason for this lack of success seems to be widespread community support (or at least tolerance)

of this practice of private re-sale. Since the activity occurs in relatively intimate settings and is hard to distinguish from simple gift giving and other private accommodations, and since the activity has wide community tolerance, it will be impossible for the police to end the practice. It seems to me that the Public Safety Office should have two different objectives with respect to this practice. First, they should try to prevent the practice from becoming too widespread. They should continue to enforce against it, but not be disappointed when they fall short of "stamping it out." Second, they should try to insure that the activity does not become concentrated in the hands of only a few people. This illegal activity should be prevented from becoming the base of significant economic or political power in the town. A good way to accomplish these objectives is to have a penalty structure that rises fairly steeply either with quantity sold, observed inventories, or the number of previous offenses. For example, a first offense involving one sale of two bottles of liquor by a person whose total personal inventory is five bottles might be fined 500.00. A fourth offense involving frequent sales and a large private inventory might be fined \$10,000 and jailed for three months. The basic objective of this scheme would be to keep the total amount of illegal activity low and to prevent the emergence of large, specialized operations.

Third, while it is tempting to consider very stringent controls on liquor "imports" (whether by mail order or personal conveyance), it does not appear that either a statutory or political base exists for such a policy. In addition, despite the apparent simplicity of controlling imports, it is likely that there would be significant implementation problems. If it seemed desirable to move in this direction, I would recommend trying something different than personal quotas on imports. I would simply seek some

authority to monitor the flow of alcohol into the community by requiring shippers to report all liquor shipments to the Public Safety Office. Such "intelligence information" would be very valuable in managing the program against "bootleggers," and would be a necessary part of any program to restrict the total supply of alcohol to Barrow. Consequently, if a monitoring program were created now, it would help with the moderate program of supply reduction and would provide some important experience that would be useful in gauging the potential of a more stringent control policy that limited total imports.

Thus, with respect to controlling the supply of alcohol, I would recommend the following program: 1) do not re-open the community liquor store; 2) control the system of bootlegging by continuing to enforce the current laws against personal re-sale, but changing the structure of penalties to prevent the emergence of large scale operations; and 3) seek authority to monitor (but not control) the commercial flow of alcohol into Barrow. This program should keep the quantity of alcohol coming to Barrow well below the level which would result from re-opening the liquor store, will help prevent the emergence of large illegal operations, and is politically and bureaucratically sustainable. Moreover, this program sets the stage for further restrictions on supply if that seems desirable.

4.3 Influencing Norms Governing Drinking

A third way in which the local government might seek to influence the size and shape of the alcohol problem is by trying to shape local norms governing drinking behavior. This is always difficult to accomplish through governmental agencies since their influence is generally less pervasive, intimate and compelling than the influence of family and friends. Still, there are at least two reasons to be relatively hopeful about accomplishing this purpose in Barrow. The first reason is simply that

the community is small enough to be able to plan and manage a program that engages a large fraction of the community on a continuing basis. After all, the entire community is smaller than a university, and about the size of some mid-western high schools. The second reason is that the current prevailing norms governing drinking are neither functional, nor deeply rooted in the community life. Hence, one might guess that the current norms would yield to a new set of norms if they could be persuasively and consistently presented. As we thought about how to influence the norms governing drinking behavior, three possibilities came to mind.

One device is familiar and has already been tried in Barrow: an information campaign about alcohol and the possible consequences of drinking too much. While we had neither the time nor the expertise to evaluate the T.V. discussion program and "spots" developed to address the subject of drinking, several questions occurred to us. First, we were uncertain how widespread T.V. viewing was in the local population. We did not know how many families had T.V.'s, how often they watched, nor how they regarded the information. Our worry was that T.V. was not a powerful medium of communication to the population of drinkers.

Second, most of the "spots" we saw were designed to make the local population afraid of the consequences of drinking. One spot showed an Eskimo staggering and falling in the snow, a second showed a neglected child and linked good child care to the cultural traditions of the eskimo, a third presented ominous pictures of a detention cell. As devices for persuading the local population to drink less, these spots had two weaknesses. Since the events depicted in the spots did not often occur to drinkers in the community, their own extensive experience contradicted the message of the "spots." As a result, they were unlikely to be persuaded about the dangers of drinking. In addition, the spots suggested no alternative

behavior to substitute for the drinking, nor any way to respond to immediate pressures to keep drinking. Without such suggestions, even a drinker who was persuaded that drinking was bad would not necessarily be able to stop. Finally, to make matters worse, the spots presented a negative image of the detention program.

Thus, while we remain unsure about the potential of these education programs, it seems fairly clear that the current program is not very well designed. If the local government decided to move in the direction of community education through mass media appeals, it would probably pay to have some real professionals design and manage the program.

A second device for influencing norms governing drinking behavior is simply to have widespread public involvement in official (court) actions involving drunkenness. Perhaps the most effective devices here would be publicizing the coroner's hearings about traumatic deaths and the role of alcohol in those deaths. An alternative forum would involve criminal trials involving assault, rape, murder etc. in which alcohol was involved. The basic idea here is that the population should be forced to confront real evidence of the effects of alcohol, and see the negative attitudes of social institutions such as the courts and health agencies towards drinking. Obviously, this only works to the extent that people attend these formal proceedings and place confidence in the institutions. To get a concrete sense for how such a program would work, the officials of the town might consider what would have happened if they had held a widely publicized coroner's inquest about the drowning death that occurred this summer. We don't have enough experience with the community and its relations with the coroner and the courts to judge this issue.

A third device, more radical in conception than the others, is to establish a "managed bar." Currently, most of the drinking in Barrow seems to follow a dangerous pattern: a bottle is opened, and people drink until it is empty. This practice produces very high short term rates of consumptions and very highly intoxicated states. In addition, the drinking occurs mostly in private residences. The idea of the "managed bar" is that the town could open a public drinking facility, attract a large portion of the drinking that now occurs, but then regulate individual drinking practices by serving mixed drinks, beer and wine relatively slowly to patrons of the bar. In addition, the staff of the bar would be trained and equipped to take intoxicated people home, break up fights, etc. The hope is that this bar could gradually change drinking practices - partly by directly supervising a substantial fraction of the drinking, and partly by creating some different styles of drinking that would then carry over into private drinking occasions.

This proposal is a fairly risky one because: 1) several difficult conditions must be met to capture the potential benefits of the program; and 2) substantial "down-side" risks exist if the necessary conditions are not met. The crucial uncertainty is exactly how the citizenry of Barrow would react to the deliberate effort to change drinking practices. The most favorable hypothesis is that the population is not strongly committed to their current style of drinking: it is simply an unfortunate practice that has sprung up. The crucial aspects of drinking is not the high level of intoxication, but the conviviality of the occasion. The elevated levels of consumption occur simply because of the custom of finishing the bottle once it is opened. If this were the case, opening a public bar would attract a lot of people (because it would satisfy the need for

conviviality), and the population would not resist the effort to regulate drinking (since they had no great stake in finishing bottles of whiskey.). On the other hand, the opposite could be true. The population could be drinking because they wanted to be very drunk, boisterous and reckless. If this were true, opening the bar would be about as disastrous as opening the store. A new supply would be created, and the "management" provided in the bar would fail to control either drinking practices or associated behavior. Thus, the program will succeed only if a large fraction of current drinkers are not strongly motivated to be very drunk, are interested in being sociable, and if the management of drinking practices in the bar can be sufficiently subtle, strong and legitimate to displace current drinking practice. If these conditions are not met (and they are very difficult to meet), this program risks an increase in the level of drinking and associated consequences. Again, if we wanted to get a sense for how this program would work, one can imagine what the Top of the World Hotel Restaurant would be like on a Saturday night if its staff was quadrupled, and was committed to serving liquor very slowly to a crowd of patrons. If one can't imagine being able to shape the drinking practices with this kind of "management," the program should probably not be undertaken.

4.4 The Proposals in the Context of Barrow's Overall Development

The proposals discussed above are quite narrow. They are focused on the drinking problem in Barrow. Moreover, their goals, while important, are relatively modest. They are not designed to end drinking in Barrow, nor to eliminate all the problems that drinking might cause. They are designed to make some improvements in the most important dimensions of the problem by building on an existing institutional base.

It is possible, of course, that such proposals are unacceptable because they are inconsistent with a larger, more ambitious strategy for

Barrow as a whole. Perhaps a vision exists of Barrow twenty years from now, and the amounts and style of drinking that would remain in Barrow even if our narrow proposals worked well is simply inconsistent with that vision. A legitimate worry is that the residual level of drinking in Barrow would be relatively high for a modern community and impede either the independent economic development of Barrow, or the successful assimilation of the population into the culture of the "lower 48." But from our perceptions of the way that Barrow is likely to develop in the future, it does not appear that high levels of drinking would be inconsistent with that future. In fact, drinking is likely to fit into that future like a hand in a glove. One can support this view by a simple analysis of the economy of the town.

The current economy of the town is dominated by the enormous tax revenues paid by the pipeline. This money is being spent on public works and the maintenance of a (largely white) public service (and administrative services) bureaucracy. These activities in turn generate additional activity in the form of construction and the distribution of consumer goods. Other major pieces of the economy include the assets of the North Slope Development Corporation and the traditional hunting and trading activities.

Some reflection on this situation suggests two interesting observations. First, in the present situation, high levels of drinking do not place a severe economic burden on the town. Since the Eskimos voluntarily abstain from drinking while engaged in traditional hunting activities, nothing is lost in these areas. And, while in principle drinking may be interfering with productivity in the administrative jobs of the Government and the Development Corporation, there is no great pressure to perform successfully in these jobs. It is almost as if the jobs existed partly as a training program for the employees and partly as a basis for distributing tax

revenues. There is relatively little production of either materials or services in the Barrow community despite the existence of large amounts of cash from the Government and the Development Corporation. Most of the real production continues to be hunting and fishing. Construction is becoming increasingly important, as are services, but many of the key jobs are held by non-natives, and virtually all of the tools and materials are imported. So, in a strange sense, there is no "domestic" economy based on production, and consequently, little need for people to be sober and disciplined - except when they are hunting, which they seem to recognize and choose to do voluntarily.

Second, it is a little hard to imagine how the economic base of the Borough could change. We can imagine some disasters, of course. If the flow of revenues from the pipeline ever ends, the town's economy will shrink dramatically. Consumer goods will disappear from the stores. Tools and materials required to maintain the capital stock of the town (e.g., public housing, roads, sewage disposal, etc.) will disappear. And the town will gradually turn back into a remote village of Eskimo hunters. But it is a little hard to imagine how the town will be able to diversify its economy. The basic problem is that there is very little in the Borough besides the natural resources. It is far away from population centers and largely inaccessible. Its labor force is neither large, nor disciplined, nor particularly inexpensive. Apart from oil, there is nothing to sell to the outside world or to use to make life better in Barrow. The town is a sufficient curiosity to attract some tourists, but it is neither so compelling that large numbers come, nor so beautiful that people wish to stay long. In effect, the economy is locked into what always was available: large travelling mammals (whales, caribou), and oil. The interest of the

outside world in oil has brought wealth to the town. And the town has responded with public works, a large governmental sector and a secondary consumer oriented economy built up to satisfy the tastes of those who held jobs in these central bureaucracies. But the basic problem remains that there is nothing to use to alter the economic base of the town: it is locked into its dependence on oil, whales and caribou. If the interest in oil disappears, the economy will once again be based on whales and caribou.

If these observations are correct, then Barrow is likely to develop in the future as it has in the last few years. The population will become wealthier, and the need for discipline and sobriety will become weaker, not stronger. Alcohol will be attractive as a way of spending the leisure and the money and as a way of coping with the cultural strains that will develop. Thus, drinking will increase because it fits into the emerging economic and cultural patterns. In such a world, the narrow proposals we have developed might be just what are needed. They will slow the rate of drinking, change its character and prevent some of the worst consequences.

But as one looks at this future for Barrow, one is tempted to try not just to ameliorate the drinking problem, but to change the future. After all, the future depicted here is not a happy one. Even when money is pouring in from the pipeline, the population of the town is in trouble. (It is in less trouble with our proposals than without them, but it is still in trouble.) And when the money stops (as it inevitably will), the town will quickly revert to an even unhappier position: It will go back to being a remote eskimo community but without the skills and discipline that are required to survive in that position. The problem, of course, is how to alter the future.

The most common answer to this problem among people we talked to in Barrow was "independent economic development." The idea seemed to be that

a new economic base could be created in Barrow that would grow and survive even if revenues from the pipeline ended, and that the products, working style, etc. associated with that economy would all be in some sense distinctively Eskimo. Moreover, people imagined that this world would be intolerant of drinking. Consequently, there would be important reasons both for the society and for individuals within the society to stop their drinking. Neither of these complacent assumptions seems likely to be true. It is very hard to see what the new economic base would be. It is also hard to see why it would be intolerant of alcohol. Hence, it is hard to see how a vision of an independent, sober Barrow could come into existence. Perhaps we lack imagination. But if so, many people in Barrow share this deficiency because they could not describe the industries or activities that would form the basis of the new community. And, many of the businesses in which this economy would be constructed are inevitably either small or impermanent (e.g., tourism, public works construction, snowmobile repair).

Two other possible ways of changing the future exist, but neither is likely to be particularly attractive to the community. One notion is simply to capitalize Barrow's current revenues. In effect, the town's current consumption would be cut, and its savings rate would increase. The savings would be invested. Thus, the town would turn into a group of people who collectively own large pieces of activity outside of Barrow. Increased savings would involve shrinking the administrative and public service bureaucracies, and slowing the pace of capitol construction in the Public Works program. It would also involve ceasing quixotic efforts to develop independent economic activity. In effect, the growth in total local spending would be cut, and the proceeds would be converted into wealth.

A second notion (sure to be unpopular) is to continue as the town is now going, but to explicitly prepare the population for assimilation into the culture of the "lower 48" so that they can move and be prosperous there when Barrow has ceased to be a cozy haven temporarily insulated from the economic demands of the rest of the world by their accidental ownership of oil.

In short, there are two sustainable futures for Barrow. One future is essentially a traditional Eskimo community made a little more comfortable by the fact that they own productive assets outside of Barrow and reap the benefits of ownership. A second future is one of a community that is being prepared to migrate into the culture of the lower 48 as wealthy, competent citizens. The future that seems least healthy (but most likely given current trends) is for the wealth coming from the pipeline to be converted into public works, a public service bureaucracy and a series of uneconomical efforts to create some kind of economic base in Barrow apart from hunting and oil. The problem with this future is that the society is unhealthy and confused while the revenues are pouring in, and nothing is left behind when the revenues stop.

Thus, if Barrow continues to develop as seems most likely, the proposals we developed to deal with the alcohol problem will serve a useful purpose. They will reduce the problems associated with an increasing level of drinking. We are worried, however, that the likely future of Barrow is not a good one. We can imagine some alternative futures and can guess what might be required to achieve those futures. But such discussions go well beyond not only our mandate, but also our expertise. Moreover, what we were able to guess about the alternative futures and sense about the political forces in the town made us think that the steps needed to create alternative futures (primarily an increase in savings, a reduction in the public service

bureaucracy and the abandonment of quixotic efforts to construct a different local economic base, or, alternatively, an explicit recognition of the eventual need to disperse the community) will be politically unacceptable. So, while we feel we are doing relatively little to help with the central long term problems of the community, we have at least addressed the narrow problem of drinking in Barrow in its most likely future.

Appendix 1:

Derivation of Population
Estimates for
Barrow Village

We lacked detailed current information on the native population of Barrow broken down by age and sex. We needed such information to be able to compute a variety of rates. Hence, I had to construct some population estimates.

The first step was to get a clear idea of the total population of Barrow from as many sources as we had available. This data and the sources are presented in Table A1-1. The next step was to develop some sense for how these populations would be distributed among age/sex cohorts. Table A1-2 presents the data available on this issue by source. The final step was to choose estimations of the total population (and the distribution by age and sex) and to calculate the resulting size of the native population residing in Barrow Village (including Browerville) by age and sex. These calculations are presented in Table A1-3. The numbers in these tables served as the basis of all population based rates.

Table A1-1

Population Figures

	1939	1950	1960	1969	1970	1971	1972	1973	1974	1975 (July)	1976	1977	1978 (July)	1979
Barrow: Total Vicinity	363 ¹	951 ¹	1314 ^{1,2}	2163 ¹	2104 ²			2167 ²	2163 ^{2,3}	2045 ²	2106 ²		2715 ⁴	3400 ⁵
PA & E, Inc.									932 ³	116 ²	88 ²			
FAA									72 ³	17 ²	11 ²			
Pow Main									152 ³	15 ^{2,3}	15 ²		16 ⁴	16 ⁵
Water Bureau				25 ¹					112 ³	19 ²	10 ²			
Navy/Coast Guard									132 ³	12 ²	7 ²			
NARL				170 ¹					442 ³	66 ²	70 ²		228 ⁴	156 ⁵
BIA				45 ¹					772 ³	77 ²	80 ²			
PHS				32 ¹					272 ³	35 ²	38 ²			
Village				1891 ¹					1876 ^{2,3}	1666 ²	1787 ²		2471 ⁴	3228 ⁵
Native			(95%)	1796 ¹	1901 ⁶									2490 ⁷

1. Barrow Plan, July 1970
2. Memorandum from Robert J. Depire, 12/31/75
3. North Slope Borough, General Information and Economic Factors, Feb. 1975

4. "Annual Overall Economic Development Program Report and Program Projection" North Slope Borough, July 1978
5. "North Slope Borough Population Estimate: July 1979"

6. "North Slope Borough: Reconnaissance Study"
7. Based on estimates of native population in "Service Unit" of PHS subtracting total population of outlying villages.

Table A1-2

Age/Sex Matrix for
Barrow Village Population

	Male	Female	Total
<5	.07 ^a	.07 ^a	.14 ^a
	.07 ^b	.06 ^b	.13 ^b
	.07 ^c	.07 ^c	.14 ^c
<10	.08 ^a	.09 ^a	.17 ^a
	.07 ^b	.07 ^b	.14 ^b
	.08 ^c	.08 ^c	.16 ^c
<15	.07 ^a	.06 ^a	.13 ^a
	.07 ^b	.06 ^b	.13 ^b
	.07 ^c	.07 ^c	.14 ^c
<25	.10 ^a	.10 ^a	.20 ^a
	.10 ^b	.08 ^b	.18 ^b
	.18 ^c	.09 ^c	.19 ^c
<45	.13 ^a	.10 ^a	.23 ^a
	.16 ^b	.10 ^b	.26 ^b
	.11 ^c	.11 ^c	.22 ^c
<65	.06 ^a	.05 ^a	.11 ^a
	.06 ^b	.06 ^b	.12 ^b
	.06 ^c	.05 ^c	.11 ^c
≥65	.01 ^a	.01 ^a	.02 ^a
	.02 ^b	.02 ^b	.04 ^b
	.02 ^c	.02 ^c	.04 ^c
Total	.52 ^a	.48 ^a	
Total	.55 ^b	.45 ^b	
Total	.51 ^c	.49 ^c	

- a. Total 1970 Population (Census Figures) (Barrow Village)
- b. Total 1979 Population (Public Health Service Unit Estimates)
- c. Native 1979 Population (Public Health Service Unit Estimates)

Table A1-3
 Barrow Village
 Population Estimates: 1979
 (By Race and Age)

	Native			Total		
	Total	Male	Female	Total	Male	Female
Total						
High	3,000	1,530	1,470	3,200	1,760	1,440
Low	2,500	1,275	1,225	3,000	1,650	1,350
<5 years						
High	420	210	210	316	224	192
Low	350	175	175	390	210	180
<10 years						
High	480	240	240	448	224	224
Low	400	200	200	420	210	210
<15 years						
High	420	210	210	416	224	192
Low	350	175	175	390	210	180
<25 years						
High	570	300	270	576	320	256
Low	475	250	225	540	300	240
<45 years						
High	660	330	330	832	512	320
Low	550	275	275	780	480	300
<65 years						
High	330	180	150	384	192	192
Low	275	150	125	360	180	180

Table AI-4

Population Figures

	1939	1950	1960	1969	1970	1971	1972	1973	1974	1975 (July)	1976	1977	1978 (July)	1979
Barrow: Total Vicinity	363 ¹	951 ¹	1314 ^{1,2}	2163 ¹	2104 ²			2167 ²	2163 ^{2,3}	2045 ²	2106 ²		2715 ⁴	3400 ⁵
PA & E, Inc.									93 ^{2,3}	116 ²	88 ²			
FAA									7 ^{2,3}	17 ²	11 ²			
Pow Main									15 ^{2,3}	15 ^{2,3}	15 ²		16 ⁴	16 ⁵
Water Bureau					25 ¹				11 ^{2,3}	19 ²	10 ²			
Navy/Coast Guard									13 ^{2,3}	12 ²	7 ²			
NARL					170 ¹				44 ^{2,3}	66 ²	70 ²		228 ⁴	156 ⁵
BIA					45 ¹				77 ^{2,3}	77 ²	80 ²			
PHS					32 ¹				27 ^{2,3}	35 ²	38 ²			
Village					1891 ¹				1876 ^{2,3}	1666 ²	1787 ²		2471 ⁴	3228 ⁵
Native			(95%)	1796 ¹	1901 ⁶									2490 ⁷

1. Barrow Plan, July 1970

2. Memorandum from Robert J. Depire, 12/31/75

3. North Slope Borough, General Information and Economic Factors, Feb. 1975

4. "Annual Overall Economic Development Program Report and Program Projection" North Slope Borough, July 1978

6. "North Slope Borough: Reconnaissance Study"

7. Based on estimates of native population in "Service Unit" of PHS subtracting total population of outlying villages.

5. "North Slope Borough Population Estimate: July 1979"

Appendix 2:

Derivation of the Estimated
Price Per Gallon of
Absolute Alcohol

1. Table 2-1 presents the distribution of prices paid for single item purchases at the Barrow Community Liquor Store on January 8, 1977. Examination of this distribution suggests that two different kinds of liquor were sold in Barrow at the following prices.

	<u>Liquor #1</u>	<u>Liquor #2</u>
Quart	18.02	15.37
Pint	9.01	--
½ Pint	4.51	3.87

This interpretation obviously leaves some of the transactions unaccounted for, but surprisingly few. Moreover, the price series could be consistent with other interpretations as well. It could be that the quantities are ½ gallon, quart, pint, rather than what I have listed. But this would suggest liquor prices were comparable to lower 48 rather than inflated. It could also be that the 15.37 amount is equal to 1/5 of liquor #1 and 3.87 to the price of a six pack of beer. There was no way to verify these estimates since: a) there was no price list; and b) no one who worked at the store was available for interview.

2. If my inference is correct, the retail cost of a gallon of 80-160 proof alcohol in Barrow was approximately \$61.00 - \$72.00.

Table A2-1

Distribution of Prices Paid for
Single Unit Purchases

\$1	33,
\$2	
\$3	87,87,29,92,87,87,92,87,87,87,45
\$4	51,51,40,60,51,51,51,51,88
\$5	35,35
\$6	30,47,60,68,30,68
\$7	74,42
\$8	
\$9	01,01,17,01,01,01,01,01,96,01,01,01,01,01,01,01,01,01,01
\$10	18,
\$11	87,87
\$12	51,51
\$13	25,
\$14	
\$15	37,37,37,37,64,37,64,37,37,64,37,37,64,37,37,37,37,37,37,64,37,37
\$16	
\$17	49,49,38
\$18	02,02,02,02,02,02,02,02,02,02,02,02,02,02,02
\$19	
\$20	99,
\$21	
\$22	26,
\$23	53,96
\$24	
\$25	
\$26	
\$27	56,

Table A2-2
 Barrow Village
 Population Estimates: 1979
 (By Race and Age)

	Native			Total		
	Total	Male	Female	Total	Male	Female
Total						
High	3,000	1,530	1,470	3,200	1,760	1,440
Low	2,500	1,275	1,225	3,000	1,650	1,350
<5 years						
High	420	210	210	316	224	192
Low	350	175	175	390	210	180
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High	420	210	210	416	224	192
Low	350	175	175	390	210	180
<25 years						
High	570	300	270	576	320	256
Low	475	250	225	540	300	240
<45 years						
High	660	330	330	832	512	320
Low	550	275	275	780	480	300
<65 years						
High	330	180	150	384	192	192
Low	275	150	125	360	180	180

Table A2-3

Age/Sex Matrix

	Male	Female	Total
<5	.07 ^a	.07 ^a	.14 ^a
	.07 ^b	.06 ^b	.13 ^b
	.07 ^c	.07 ^c	.14 ^c
<10	.08 ^a	.09 ^a	.17 ^a
	.07 ^b	.07 ^b	.14 ^b
	.08 ^c	.08 ^c	.16 ^c
<15	.07 ^a	.06 ^a	.13 ^a
	.07 ^b	.06 ^b	.13 ^b
	.07 ^c	.07 ^c	.14 ^c
<25	.10 ^a	.10 ^a	.20 ^a
	.10 ^b	.08 ^b	.18 ^b
	.18 ^c	.09 ^c	.19 ^c
<45	.13 ^a	.10 ^a	.23 ^a
	.16 ^b	.10 ^b	.26 ^b
	.11 ^c	.11 ^c	.22 ^c
<65	.06 ^a	.05 ^a	.11 ^a
	.06 ^b	.06 ^b	.12 ^b
	.06 ^c	.05 ^c	.11 ^c
≥65	.01 ^a	.01 ^a	.02 ^a
	.02 ^b	.02 ^b	.04 ^b
	.02 ^c	.02 ^c	.04 ^c
Total	.52 ^a	.48 ^a	
Total	.55 ^b	.45 ^b	
Total	.51 ^c	.49 ^c	

a. Total 1970 Population (Census Figures) (Barrow Village)

b. Total 1979 Population (Public Health Service Unit Estimates)

c. Native 1979 Population (Public Health Service Unit Estimates)