



# Evaluation of Risk Factors for Repeat DUI Offenses

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**Prepared by:**  
Steven Hamilton

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Alaska Department of Transportation  
Statewide Research Office  
3132 Channel Drive  
Juneau, AK 99801-7898

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## **Foreword**

This research project investigated the relationship, for Alaskan residents, between court involvement for minor consumption of alcohol with court cases for driving under the influence of alcohol later in life. The relevance of this investigation stems from the fact that, when a youth is arrested for minor consumption of alcohol, society has an opportunity to act in a preventative manner before the behavior escalates to acts with more severe consequences, such as driving under the influence of alcohol. If we can know that, when a youth is arrested for minor consumption of alcohol, they have a greater likelihood of having a DUI case later in life than would a person without a minor consuming arrest, policy makers should have the ability to make a more informed decision about interventions.

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## Summary of Findings

In this research project, we investigated the relationship between individuals that have minor consuming court cases and the likelihood of DUI offenses later in life. The project was designed using secondary data from the Alaska Court System. One dataset consisted of all minor consuming court cases during the period 1995-1999 and a second dataset contained all DUI offenses during the period 1995-2006. Of note here is that the entire data set received contained DUI data dating as early as 1978, however, we made use only of the data for the period 1995 – 2006. The reason for these time constraints is that there were no readily available minor consuming court data for years prior to 1995 (when the current statute on minor consuming took effect) and there were no court records readily available on DUI cases after 2006.

The project approach was to identify individuals with minor consuming cases during the period 1995-1999 and identify those that had DUI court cases during the period 1995-2006. There were timing and age constraints, given the time periods of the data collected, that limited our ability to examine DUI behavior over an entire life span. We were limited to examining the DUI behavior only through their 31<sup>st</sup> birthday for people identified in the 1995-1999 dataset of minor consuming arrests.

With this constraint in mind, we found that 24.4 percent of youth with minor consuming arrests go on to have DUI offenses before their 31<sup>st</sup> birthday. The constraints described above make this a very conservative figure since DUI data from Alaska Court System indicates that more than 50 percent of DUI cases are associated with individuals 31 years of age or older.<sup>1</sup>

A second set of analyses were conducted that compared, for individual years during the period 2000 through 2006, the percentage of people who had DUI cases each year and had a minor consuming case during the period 1995 through 1999 with the percentage of the general population that had a DUI during those years. The intent was to determine whether or not, during the study years, people with minor consuming cases in their background were more or less likely than people in the general population (same age groups) to get a DUI in any given year.

When we conducted these analyses we found that, for the average of the years, people with minor consuming cases during the period 1995 through 1999 had DUI cases at the rate of 3.81% compared to the general population for the same age groups of 1.73%. The differences were most pronounced for people in their low to mid 20s (20 to 24 years of age) with the percentages being 4.72% for those with minor consuming cases versus 2.42% for people in the general population and same age group.

We also investigated whether having multiple minor consuming cases resulted in a higher probability of DUI later in life. While we found that having multiple minor consuming arrests did correlate with higher rates of DUI arrests, we found no evidence to suggest that minor consuming arrests (single or multiple) correlated with multiple DUI offenses.

The relevance of these findings is that identification of individuals that have a high likelihood of committing DUI offenses before the fact provides society with an opportunity to act in a timely manner. It is beyond the scope of this project to suggest what kinds of intervention are most important. Our primary focus was on providing an approach to identifying in advance those individuals that have a high likelihood of having a DUI offense.

## **CHAPTER 1 - INTRODUCTION AND RESEARCH APPROACH**

### **Problem Statement and Research Objective**

This research examined the connection between minor consuming court cases in Alaska and subsequent charges of driving under the influence of alcohol by these same individuals later in life.

Each year, scores of lives are lost and injuries sustained on Alaska's highways. Overall there were 14,619 motor vehicle crashes in Alaska in 2004, 975 of which involved alcohol (6.7 percent). Of the total number of crashes, 96 resulted in fatalities of which 29 had alcohol involvement (30.2 percent). For crashes with injuries but no fatalities, 16.7 percent of crashes resulting in major injury had alcohol involvement while 9.0 percent of crashes with minor injuries only had alcohol involvement. For crashes with property damage only (no injuries), 5.1 percent had alcohol involvement.<sup>2</sup> The significance of these data is that motor vehicle crashes that result in fatalities or serious injury are more likely to have alcohol involvement as a factor than crashes with less serious results. While insurance companies reimburse for property damages as well as for medical care and lost productivity, there is no way to fully make those involved "whole" again. For the deaths caused by drunk drivers, the losses are extreme and can never be compensated.

Two fundamental approaches to preventing alcohol-related crashes are to provide general public awareness and education related to the issue and to enact and enforce laws related to DUI including sanctions and treatment for those who are caught driving under the influence. There is also an emerging interest in identifying precursors or indicators of potential DUI behavior with the idea that services, education, and treatment might be provided prior to an individual initiating DUI behavior.

The primary focus of this research project was the relationship between individuals that have court cases for consumption of alcohol as minors with the individuals that have court cases for driving under the influence of alcohol (DUI) or a related charge (such as refusal to take a breath test). Specifically, our interest was in the likelihood or probability that individuals with minor consuming cases go on to have DUI cases later in life. Additionally, we investigated whether having multiple minor consuming cases had any impact on the probability of a DUI offense later.

These questions have relevance because youth that are arrested for minor consuming present society with an opportunity to act in some preventative way before the associated behaviors escalate into more serious behaviors that have the potential for fatal consequences. If we can determine that having a minor consuming arrest is a risk factor for DUI cases later in life, then it allows society to make determinations of policy based on a more complete set of cost/benefit information.

## **Scope of Study**

In this research project, we investigated four basic issues or sets of relationships that arise from the phenomenon of individuals having court cases for consuming alcohol as a minor and later having court cases for driving under the influence of alcohol or a related charge (such as refusal to take a breath test).

We investigated the frequency with which individuals that have court cases for consumption of alcohol as a minor later have court cases for driving under the influence of alcohol (or a related charge).

We investigated the timing of DUI offenses in terms of age for both the general population of DUI offenders and DUI offenders with minor consuming cases in their background.

We investigated the frequency of minor consuming offenders later incurring DUI offenses stratified by the number of minor consuming cases that individuals had. In other words, we determined the number of minor consuming offenders with only one offense that went on to have a DUI case; the number of minor consuming offenders with two offenses that went on to have a DUI case, and so on.

We compared, on an annual basis for each year during the period 2000 through 2006, the frequency of DUI offenders who had minor consuming arrests during the period 1995 through 1999 with the frequency of DUI offenders in the general population within the same age groups.

## **Research Approach**

This research project included both a literature review and also analysis of secondary data provided by the Alaska Court System. Additional demographic data for the overall Alaska population was obtained from the Alaska Department of Labor and Workforce Development. The Alaska Court System data came in two distinct sets. The first dataset was a comprehensive list of all minor consuming cases in Alaska during the years 1995 – 1999. The time span was constrained by the fact that the statute governing minor consuming was changed just prior to 1995 making it a misdemeanor charge. Prior to that, consumption of alcohol by minors was an issue that was dealt with by the Alaska Division of Family and Youth Services (since reorganized and embedded within the Alaska Division of Children Services). The change in 1995 created court records for all minor consuming cases. The final year of the study period, 1999, was the year in which that particular dataset was obtained. While we could have extended that forward, it would have served little purpose since our real interest is in comparing cases for those individuals with DUI cases later in life for the same individuals.

The second set of Alaska Court System data was the record of all DUI and related cases from the period 1995-2006. Of note is that this data set actually contained DUI data going back as

far as 1978, however, we made use only of the records for the period 1995 – 2006. Since both datasets contained personally identification information (first name, last name, date of birth), our approach was to compare the two data sets to identify individuals with minor consuming cases during the period 1995-1999 that had DUI offenses during the period 1995-2006.

## **Research Limitations and Generalization**

There were some substantial challenges in this research project that limit our ability to prove a causal relationship between minor consuming behavior and DUI behavior later in life.

Arrests and court cases are not perfect proxies for behavior. In other words, we cannot assume that individuals with minor consuming cases are representative of the population of youth that consume alcohol. These are merely the youth that are caught and there are many variables that impact the likelihood of getting caught other than the offending behavior. The same holds true for individuals with DUI cases; these are just the individuals that were caught and may or may not be a fair representation of those individuals that drive under the influence of alcohol. Further, the factors that affect being caught and charged with minor consuming may well be different than the factors that impact whether a drunk driver is caught.

There were substantial quality issues with both datasets from the court. The main issues were related to identification of individuals. There were cases when either a first name or a date of birth was omitted from the record making the record for that individual unusable. In some cases, we had positive matches on last name and date of birth with minor differences in first names (Jim versus James; Sue versus Susan; etc.). Where we were able to resolve this with confidence, we did so, however, there were many cases where we could not resolve it and therefore were unable to use the record for analytic purposes. In the minor consuming dataset, there were a total of 20,324 records of which 5,987 were unusable. This produced a number of valid records of 14,337, which represents the number of minor consuming cases available for analysis. Using this, we were able to develop a count of 10,018 unique individuals with sufficient information to cross check with the DUI dataset. The DUI dataset contained 129,130 cases of which 2,309 contained missing or corrupt identification fields. From this, we were able to generate a count of 80,754 individuals with DUI offenses during the years 1995-2006.

The phenomenon of having a minor consuming offense and then a DUI offense later in life involves a long period of time. A person who has a minor consuming offense, by definition, incurs this during the years prior to being 21 years of age. The later commission of a DUI offense, however, can take place any time prior to death. We can also find that an individual could have a DUI prior to the age of 21 and, in fact, could be charged with both a minor consuming offense and a DUI offense for the same incident (for example, a 17 year old caught driving while intoxicated). Investigation using a longitudinal approach is limited in that, in looking at the individuals with minor consuming cases during the period 1995-1999, we are constrained by time from examining their behavior beyond 31 years of age. This is

illustrated by the extreme case in which the individual is arrested for minor consuming at age 20 in 1995. In 2006, the last year for which we have data, that individual would have been 31 years old. So we can only know, for individuals with minor consuming arrests, their DUI history through their 31<sup>st</sup> year at the very latest. This is incomplete since it is possible that they may incur more DUI cases after their 31<sup>st</sup> year.

We have no way of knowing how many of the individuals in the minor consuming dataset that did not show up in the DUI dataset are still in Alaska. It stands to reason that there may be some individuals that had minor consuming cases in their teens and subsequently moved out of state. We can say that individuals with minor consuming cases that do not show up in the DUI dataset did not, during this period of time, have a DUI case in Alaska. We cannot draw any conclusions, however, about the reason. It may be that they do not engage in the behavior. It may be that they do drive under the influence but just have not been caught. It may also be that they have moved out of state. We were able to determine through published reports from the Alaska Department of Labor and Workforce Development as well as additional discussions with the Alaska State Demographer that the approximate outmigration rate for the age groups being studied was about 6% during the study period.<sup>3 4</sup>

Another confounding factor in this regard is the potential for name changes. Both data sets used for this research have only three elements that can be used to create an identity – first name, last name, and date of birth. If all three match between the two data sets, then we are assuming that this is the same person. Using this methodology, we were able to positively match 2,441 individuals from the minor consuming data set with a person in the DUI data set. This means that, of the 10,018 persons that were able to identify in the minor consuming data set with the three elements, 7,577 did not match any person in the DUI data set. If, however, the individual changed their name at some point, such as would be the case for many women who are married, it would result in non-match since the last names would be different. There is no readily available method in the data sets used for this research for tracking those name changes.

We did, however, look at some readily available information and data in an attempt to gain an understanding of the magnitude of the potential. We identified the number of non-matches between the two data sets in which the only difference leading to the non-match was the last name. Of the 7,577 individuals in the minor consuming data set that did not match any individual in the DUI data set (10,018 total identified individuals less 2,441 individuals that did match), we found only 110 individuals where the differing element was the last name only. In other words, of those people that were not matched, there are potentially 110 that might actually be the same person with a name change. If we were to assume that all 110 were in fact matches with a name change, that would increase our total match number to 2,551 (25.4 percent versus 24.4 percent). Assuming that not all of these are likely to be name changes, we conclude that this does not substantively alter the match rate in a way that changes the conclusions.

Finally, our ability to compare the court case data for people with minor consuming with the course case data with the court case data from the general population and same age groups is limited to analysis on an annual basis. Because we had only five years of minor consuming

data and seven years of reliable DUI data subsequent to the minor consuming data period, we are not able to draw conclusions about court case experiences for individuals or groups over the period of a lifetime.

## CHAPTER 2 – FINDINGS

### Review of Literature

Underage drinking, otherwise known as “minor consuming alcohol” (MCA) has long attracted national attention. There has been and continues to be ample research on this phenomenon. In reviewing the current literature, there are three main areas of focus. The first is the prevalence of underage drinking. The second is the pattern of behavior that evolves with youth that consume alcohol over time. The third area of concern is the correlation or association of drinking with behavior that has the potential for immediate and dramatic negative consequences (such as driving under the influence of alcohol).

That adolescents consume alcohol is neither new nor disputed information. For example, a 1997 student survey found that 54 percent of 8<sup>th</sup> graders, 72 percent of 10<sup>th</sup> graders, and 82 percent of 12<sup>th</sup> graders reported consuming alcohol (more than a few sips) at least once in their lives. While different studies report different percentages associated with these age groups, there is a consensus that few teenagers are completely abstinent of alcohol use by their senior year of high school.<sup>5</sup> The Alaska Court System data on minor consuming offenses between 1995 and 1999, documents more than 20,000 cases statewide involving more than 10,000 unique individuals.<sup>6</sup> In 2003, the Alaska portion of the Youth Risk Behavior Survey administered in various schools around the state found that 38.7 percent of high school students had consumed alcohol in the 30 days prior to the survey.<sup>7</sup>

What is perhaps more interesting, though, is the progression or trajectory of drinking behavior of youth during their teen years and how this translates into behavior in their adult years. Martin and Winters, in their 1998 research, found that the prevalence of alcohol-related problems in youth increase rather dramatically with age. For example, a 1993 study involving 776 households with youth found that 3.5 percent of youth ages 14-16 displayed symptoms of alcohol use disorders compared with 14.6 percent of youth ages 17-20. This reinforces the notion that youth begin using and abusing alcohol at early ages but the prevalence picks up dramatically in late teen years with the approach of adulthood.<sup>8</sup>

*National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) 2001-2002* found that drinking tends to increase with age in the late teens and peaks around age 25 or 26, although the peak for episodic heavy drinking tends to peak around age 21 or 22. Of particular interest in these findings is that those who were surveyed and reported drinking also reported driving after consuming three or more drinks on an average of five days per year.<sup>9</sup>

This does provide a good summary but we also know that different sub-groups of youth have different trajectories in the evolution of their alcohol consumption. In looking at the trajectory of growth of binge drinking with age, Maggs and Schulenberg identified four different sub-groups. The early-heavy binge drinkers tend to escalate binge drinking beginning at about age 14, peaking in the early 20s and stabilizing as they approach the mid to late 20s. Late-moderate binge drinkers tend to escalate quickly between ages 17 and 19

and remain stable through their early 20s. Infrequent and non-binge drinkers tend to be relatively stable at low levels through their 20s. Not surprisingly, heavy binge drinkers are also associated with greater incidence of criminal, violent, and anti-social behavior. Factors that contribute to trajectory run the range from biological (genetic predisposition), environmental factors (family characteristics and behavior), personal characteristics (tendency to be thrill-seeking, low self-efficacy, low self-esteem), and peer factors.<sup>10</sup>

The research confirms what might seem intuitive – that as youth move through their teen years they are more likely to consume alcohol and at greater rates. Our primary interest, though, is in understanding how this phenomenon and the associated trends impact the behavior of young adults with regard to driving under the influence of alcohol – an activity that can have immediate, severe, and irrevocable consequences. The National Highway Transportation Safety Administration published data in 2006 indicating that young adults ages 21-34 are involved in a disproportionately high percentage of fatal motor vehicle crashes in which at least one of the drivers was legally intoxicated. In 2006, 31 percent of fatal motor vehicle crashes involved drivers ages 21-34. At the same time 43 percent of the fatal crashes that involved an intoxicated driver also involved a driver age 21-34. By contrast, 36 percent of fatal crashes involved drivers over 45 years of age while only 23 percent of drunk driving crashes involved drivers over 45 years of age.<sup>11</sup>

While this correlates, to some extent, age with prevalence of DUI behavior, it does not connect the phenomenon of underage drinking with the tendency or likelihood of DUI behavior later. Martin and Winters noted that a 1998 epidemiological study of 9<sup>th</sup> and 12<sup>th</sup> graders found the most common symptom of abuse among 12<sup>th</sup> graders was drinking accompanied with other behavior that created hazardous situations, such as driving under the influence of alcohol.<sup>12</sup> More to the point, Shope, et al found that youth who drink heavily are more likely to have DUI offenses or alcohol-related auto crashes in the seven years following licensure than those youth who drink less than one drink per week.<sup>13</sup>

A 2004 research project that collected data from 9<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders and correlated this with the relevant department of motor vehicles files found that students who consumed alcohol at a greater rate also displayed a higher frequency of driving violations (alcohol-related and non-alcohol related) and “points” deducted. This points to the association of alcohol consumption with risky behaviors other than just DUI.<sup>14</sup> In the National Household Survey on Drug Abuse in 1998, the U. S. Substance Abuse and Mental Health Services Agency (SAMHSA) reported that 38 percent of youth ages 12 to 17 who reported some consumption of alcohol also reported at least one alcohol-related problem. Specifically, unsafe driving because of alcohol (driving under the influence of alcohol) was reported by about 20 percent of all respondents who reported drinking.<sup>15</sup> This last point is an important one. Of those youth who drink, one in five report that they also drive while drinking.

We can see from the review of the literature that the prevalence of underage drinking is substantial and well documented. It is also clear that the consumption of alcohol by minors intensifies with time over their teen years, although there are different trajectories for different sub-groups. Finally, we can see that there is clear evidence that consumption of

alcohol as a minor is correlated with greater tendencies toward driving under the influence in later years.

## Results of Analysis

### *Overall Review of Data*

In the dataset of minor consuming court cases 1995-1999, there were 20,324 cases. Some of these were cases for individuals that had only a single offense while other cases were for individuals that had multiple offenses over time. After data cleansing and preparation, we ended up with 14,337 cases for which we had reliable personal identification information. These 14,337 cases represented 10,018 discrete individuals with sufficient identification information to cross reference to the DUI dataset.

The dataset of DUI offenses contained 129,130 cases of which 2,309 had errors in the name or date of birth fields that could not be resolved. This produced a list of 80,754 discrete individuals against whom the list of minor consuming offenders could be checked. Table 1 summarizes this.

Table 1: Description of Minor Consuming and DUI Datasets

<b>Measure</b>	<b>Records</b>
Total Minor Consuming Cases	20,324
Corrupt Records* in MC Dataset	5,987
Unique Individuals in MC Dataset	10,018
<b>Total DUI Cases</b>	
Total DUI Cases	129,130
Corrupt Records* in DUI Dataset	2,309
Unique Individuals in DUI Dataset	80,754
<b>Minor Consuming Individuals with DUI Court Case</b>	
Minor Consuming Individuals with DUI Court Case	2,441
DUI Cases for Minor Consuming Individuals**	3,484

(Data Source: Alaska Court System Database of Court Cases – Unpublished Data)

\* Corrupt records are those in which a key piece of personal identifying information (first name, last name, or date of birth) is missing or otherwise unusable.

\*\* This is the total number of DUI cases linked to individuals who had minor consuming cases during the period 1995-1999

### *Overall Correlation of Minor Consuming Arrests with DUI Arrests Later in Life*

As noted in Table 1, of the 10,018 discrete individuals in the minor consuming dataset, 2,441 (24.37%) showed up in the later record of court cases with DUI offenses.

Of similar interest might be the percentage of overall DUI offenders that are represented in the minor consuming dataset. This question, however, is not answered by a simple computation such as the one noted above. This is because, of the population of all DUI offenders in the dataset, a substantial number are of an age that would preclude their presence in the minor consuming dataset. In other words, any individuals in the DUI dataset that are over 31 years of age could not have been in the minor consuming dataset simply because of their age. This would invalidate any computation of the percentage of the DUI dataset that was also reflected in the minor consuming dataset. Although not a perfect solution, we were able to isolate those individuals in the DUI dataset that were 31 years of age and younger and then use that number in our computation.

To refine this estimate, we filtered for each year of the DUI data period (1995-2006) to exclude all individuals who, just by virtue of their age during the year examined could not have been a part of the minor consuming data set. For example, in looking at DUI data from the year 2000, the maximum age that would be consistent with the potential for a minor consuming arrest during the period 1995 – 1999 is 25. We arrive at this age by looking at the earliest possible minor consuming arrest on record (1995) and assuming the maximum age at which a person could incur a minor consuming charge (age 20). Extending this, a 20 year old in 1995 would be 25 in 2000. Anyone who was arrested for DUI in 2000 that was over the age of 25 would have been over the age of 21 in 1995 and therefore could not have received a minor consuming charge. We conducted this filtering for each year of the DUI study period. Using this methodology we identified 16,243 individuals in the DUI data set that were of an age that they could have potentially been included in the minor consuming data set. Of this sub-set of the DUI population, 2,441 (15.0%) were documented as having a minor consuming arrest during the period 1995-1999. In other words, of those 16,243 individuals with DUI cases during the period 1995-2006 who were of an age that would place them in the range of minor consuming alcohol arrests during the period 1995-1999, 2,441 or 15.0% had minor consuming arrests.

A final caution on the findings presented in the prior paragraph: this still does not take into account two factors. One is that this does not tell us anything about the group of people in the DUI data base who are over 31 years of age. By virtue of their age, they could not have had a minor consuming case that was captured by our minor consuming data set. Since we know that a substantial number of individuals have DUI cases after age 31, there is a gap in our understanding of the relationship of minor consuming arrests to DUI cases later in life. The second caution is that even for people within the correct age range, there are very likely individuals that came to Alaska after receiving a minor consuming charge in another state. With the data that we have, there is no way to filter these individuals out of the DUI data.

### *DUI Arrests by Age at DUI Offense*

In understanding these data, it is important to consider the distribution of cases by age at the time of the offense. Simply because of time span constraints (as previously noted), we can only investigate DUI offenses committed by individuals with minor consuming cases up until their 31<sup>st</sup> birthday. Looking at the overall age distribution of DUI cases in general, we find

that there are substantial numbers of cases for individuals older than 31 years of age at the time of offense. Recognizing the proportion of the general DUI offenders that are over 31 at the age of offense can help us better understand the potential for individuals with minor consuming cases to have additional DUI involvement beyond their 31<sup>st</sup> birthday.

Table 2 provides a summary of the distribution of age groups for DUI offenders in general. It is noteworthy here that the unit of inquiry is the case rather than the individual. We do this because an individual can have multiple cases and our interest lies in the age at which offenses are committed.

Table 2: Distribution of DUI Cases by Age Group

Age Group	Offenses	Percentage
Under 21	8,642	6.83%
21-25	22,668	17.91%
26-30	21,520	17.01%
31-35	20,962	16.57%
36-40	18,803	14.86%
41-45	14,755	11.66%
46-50	9,199	7.27%
51-55	5,148	4.07%
56-60	2,615	2.07%
Over 60	2,228	1.76%

(Data Source: Alaska Court System Database of Court Cases – Unpublished Data)

What is apparent here is that 58.25% of all DUI cases 1995-2006 were associated with individuals who, at the time of offense, were 31 years of age or older. In the absence of evidence to the contrary, we might expect that DUI offenders with minor consuming cases in their background would experience DUI arrests and cases at about the same rate in later years as the general population of DUI offenders. This would mean that our analysis is very conservative in terms of the likelihood of minor consuming offenders having DUI cases later in life. This view is also consistent with existing research, which shows that about 35 percent of all DUI arrests nationally are for people under 25 years of age. About 10 percent are under 21.<sup>16</sup>

### *Analysis of Minor Consuming/DUI Offenders by Number of Offenses*

The issue of repeat offenders (both minor consuming and DUI) is of particular interest to society. In both cases, these represent circumstances in which an offending individual has been identified and has suffered some consequence as a result only to re-offend at a later date. Looked at another way, this represents a failure of the consequence to produce a positive result. We explored the number of minor consuming offenders that go on to have DUI cases later stratified by the number of minor consuming cases each has. In other words, we seek to understand whether individuals with multiple minor consuming cases have a greater likelihood of having a DUI case later than those with only single offenses. Table 3 provides a summary of the findings.

Table 3: Number of Minor Consuming Offenders (total and with subsequent DUI) by number of minor consuming offenses

Number of MC Offenses	Total Individuals		MC Individuals with DUI	
	Count	Percentage	Count	Percentage
Single MC Offense	7263	72.5%	1590	65.14%
Two MC Offenses	1533	15.3%	454	18.60%
Three MC Offenses	561	5.6%	153	6.27%
Four or More MC Offenses	661	6.60%	244	10.00%

(Data Source: Alaska Court System Database of Court Cases – Unpublished Data)

The analysis here indicates that individuals with multiple minor consuming offenses go on to have DUI cases at slightly higher rates than individuals with only single minor consuming cases.

We might also be interested in whether individuals with minor consuming cases are more likely to be multiple DUI offenders than those without minor consuming cases. While the question seems straightforward, we do not have the data necessary to draw any conclusions for this question with any degree of confidence.

#### *Comparison of Annual Rate of DUI Cases for Minor Consuming Individuals versus the general population*

In the final area of analysis, we sought to determine whether individuals with minor consuming cases during the period 1995 – 1999 were more or less likely to have a DUI case in any given year during the period 2000 – 2006. For this analysis, we stratified the population of both the minor consuming individuals and the general population into age groups consistent with census groupings. The groupings examined were 15-19 years of age, 20-24 years of age, 25-29 years of age, and 30-31 years of age. Note that the last group was limited at the upper end by the maximum age of a person with minor consuming during the period 1995 – 1999 (31 years of age).

The development of the overall population of individuals within each age group that had a minor consuming case during the period 1995-1999 to apply to DUI case frequency during the period 2000 through 2006 was far more complex and problematic than the other analyses undertaken in this project. In general, we had to “age” this population of people from their age at the time of offense (period 1995 through 1999) to their age during the period 2000 through 2006. For example, if 15 year old individual received a DUI in 1995, that person would be 20 years old in 2000, the first year of our study period. They would be 21 in 2001, 22 in 2002, and so on. This “aging” computation had to be done for each individual that had a minor consuming arrest during the period 1995 through 1999. Another problem we encountered was that individuals could get repeat minor consuming arrests so that a 15 year old with a minor consuming case in 1995 might have a minor consuming case as a 17 year old in 1997. For the period for which we pulled minor consuming data, we had to “unduplicate” these individuals and ensure that, in defining the size of the population, we were not double counting.

To accomplish this, we began with all minor consuming offenders for the year 1995 and aged them forward to get a count of 1995 offenders within each age group for each year 2000 through 2006. We then took the next year’s cases, unduplicated the individuals, and aged all unique offenders forward to the years 2000 through 2006 stratified by age group. We did this for each year 1995 through 1999. We did have partial 2000 minor consuming data but, since we did not have a full year of data, we chose not to include that year in the minor consuming data. What we have at the end of this data preparation is, for each year 2000 through 2006, the number of total individuals who had minor consuming arrests during the period 1995 through 1999. This represents the “population” of minor consuming offenders, which will serve as the denominator in determining the percentage that go on have DUI offenses each year within each age group. For this operation, we also factored in a rate of 6% outmigration based on previously cited information from the Alaska Department of Labor and Workforce Development. It was necessary to make this adjustment since the overall population data against which we compared this considers migration. We are not able to factor in in-migration since we cannot know which of the individuals within the general population migrated in. Without that, we cannot know how many of those had DUI cases.

To complete the associated data set, we determined which of these individuals had DUI arrests each year during the period 2000 through 2006. What this allowed us to do was then to say, for each age group, the percentage of individuals with minor consuming arrests in their background (1995-1999) had DUI cases each year during the period 2000 through 2006.

Tables 4 through 11 present, for each age group in each year, the percentages of individuals who were minor consuming offenders during the period 1995 through 1999 who had DUI cases in that year compared to the percentage of the overall population within the age groups that had DUI cases in that year. Note that the age groupings vary by year since the cohort of minor consuming offenders for years 1995-1999 age during the period creating different ranges for each year.

Table 4: Comparison of DUI Frequency - MC Offenders versus General Population (2000)

Age Group	Minor Consuming Population			General Population		
	Population	With DUI	Percentage	Population	With DUI	Percentage
15-19	2,840	90	3.17%	50,169	261	0.52%
20-24	6,505	210	3.23%	39,727	779	1.96%
25-26	673	17	2.53%	16,260	303	1.86%
<b>Total</b>	<b>10,018</b>	<b>317</b>	<b>3.16%</b>	<b>106,156</b>	<b>1,343</b>	<b>1.27%</b>

(Data Source: Computed values based on population data from Alaska Department of Labor and Workforce Development “Alaska Population Estimates 2000 – 2008” and Alaska Court System Database of Court Cases – Unpublished Data)

Table 5: Comparison of DUI Frequency - MC Offenders versus General Population (2001)

Age Group	Minor Consuming Population			General Population		
	Population	With DUI	Percentage	Population	With DUI	Percentage
15-19	1,877	68	3.62%	51,648	291	0.56%
20-24	6,302	248	3.94%	39,310	924	2.35%
25-27	1,238	36	2.91%	24,373	430	1.76%
<b>Total</b>	<b>9,417</b>	<b>352</b>	<b>3.74%</b>	<b>115,331</b>	<b>1645</b>	<b>1.43%</b>

(Data Source: Computed values based on population data from Alaska Department of Labor and Workforce Development “Alaska Population Estimates 2000 – 2008” and Alaska Court System Database of Court Cases – Unpublished Data)

Table 6: Comparison of DUI Frequency - MC Offenders versus General Population (2002)

Age Group	Minor Consuming Population			General Population		
	Population	With DUI	Percentage	Population	With DUI	Percentage
17-19	847	50	5.90%	30,817	325	1.05%
20-24	5,865	258	4.40%	40,051	917	2.29%
25-28	2,103	67	3.19%	32,893	652	1.98%
<b>Total</b>	<b>8,816</b>	<b>375</b>	<b>4.25%</b>	<b>103,761</b>	<b>1,894</b>	<b>1.83%</b>

(Data Source: Computed values based on population data from Alaska Department of Labor and Workforce Development “Alaska Population Estimates 2000 – 2008” and Alaska Court System Database of Court Cases – Unpublished Data)

Table 7: Comparison of DUI Frequency - MC Offenders versus General Population (2003)

Age Group	Minor Consuming Population			General Population		
	Population	With DUI	Percentage	Population	With DUI	Percentage
18-19	345	14	4.06%	20,130	235	1.17%
20-24	4,409	224	5.08%	41,280	1,076	2.61%
25-29	3,460	97	2.80%	41,737	776	1.86%
<b>Total</b>	<b>8,215</b>	<b>335</b>	<b>4.08%</b>	<b>103,147</b>	<b>2,087</b>	<b>2.02%</b>

(Data Source: Computed values based on population data from Alaska Department of Labor and Workforce Development “Alaska Population Estimates 2000 – 2008” and Alaska Court System Database of Court Cases – Unpublished Data)

Table 8: Comparison of DUI Frequency - MC Offenders versus General Population (2004)

Age Group	Minor Consuming Population			General Population		
	Population	With DUI	Percentage	Population	With DUI	Percentage
18-19	123	9	7.31%	20,780	246	1.18%
20-24	3,392	169	4.98%	42,893	1,158	2.70%
25-29	3,982	143	3.59%	42,450	844	1.99%
30	116	2	1.73%	8,623	173	2.01%
<b>Total</b>	<b>7,613</b>	<b>323</b>	<b>4.24%</b>	<b>114,746</b>	<b>2,421</b>	<b>2.11%</b>

(Data Source: Computed values based on population data from Alaska Department of Labor and Workforce Development “Alaska Population Estimates 2000 – 2008” and Alaska Court System Database of Court Cases – Unpublished Data)

Table 9: Comparison of DUI Frequency - MC Offenders versus General Population (2005)

Age Group	Minor Consuming Population			General Population		
	Population	With DUI	Percentage	Population	With DUI	Percentage
18-19	36	3	8.24%	20,632	226	1.10%
20-24	2,122	125	5.89%	43,863	1,126	2.57%
25-29	4,457	160	3.59%	42,465	812	1.91%
30	397	7	1.76%	9,139	132	1.44%
<b>Total</b>	<b>7,013</b>	<b>295</b>	<b>4.21%</b>	<b>116,099</b>	<b>2,296</b>	<b>1.98%</b>

(Data Source: Computed values based on population data from Alaska Department of Labor and Workforce Development “Alaska Population Estimates 2000 – 2008” and Alaska Court System Database of Court Cases – Unpublished Data)

Table 10: Comparison of DUI Frequency - MC Offenders versus General Population (2006)

Age Group	Minor Consuming Population			General Population		
	Population	With DUI	Percentage	Population	With DUI	Percentage
19	6	2	34.72%	9,991	138	1.38%
20-24	1,167	64	5.49%	45,578	1,086	2.38%
25-26	4,377	142	3.24%	42,514	811	1.91%
30-31	861	22	2.55%	18,062	249	1.38%
<b>Total</b>	<b>6,411</b>	<b>230</b>	<b>3.59%</b>	<b>116,145</b>	<b>2,284</b>	<b>1.97%</b>

(Data Source: Computed values based on population data from Alaska Department of Labor and Workforce Development “Alaska Population Estimates 2000 – 2008” and Alaska Court System Database of Court Cases – Unpublished Data)

Table 11: Average Rate of DUI - Minor Consuming Population versus General Population (2000-2006)

<b>Age Group</b>	<b>Minor Consuming Population</b>	<b>General Population</b>
15-19	5.38%	1.00%
20-24	4.71%	2.41%
25-29	3.12%	1.90%
30-31	2.02%	1.61%
<b>Overall</b>	<b>3.81%</b>	<b>1.73%</b>

(Data Source: Computed values based on population data from Alaska Department of Labor and Workforce Development “Alaska Population Estimates 2000 – 2008” and Alaska Court System Database of Court Cases – Unpublished Data)

From tables 4 through 11 we can see that individuals that are arrested for minor consuming tend to get arrested for DUI at a higher rate than we see in the general population. That difference is more pronounced in late teens and early twenties and diminishes somewhat as these individuals approach the age of 30, although the difference is still present. At the younger ages, the rate of DUI arrests is nearly double in the minor consuming population than we see in the general population.

In presenting this, there is another factor that we have not considered. While we examined the potential impact of outmigration, we have no way of knowing how many of the individuals that are migrating into the state have minor consuming arrests in their background since we only have Alaska minor consuming data. We have no way of factoring this since we have no data on where in migrating people come from and how their states of origin minor consuming trends compare to Alaska’s trends. If we assume that some individuals migrating in have minor consuming arrests in their background, then this serves to increase slightly the percentages of individuals in the general population and slightly mitigate the differences. We cannot know, given the available data, the extent of this mitigation.

## CHAPTER 3 - INTERPRETATION, APPRAISAL, AND APPLICATIONS

### Interpretation

Before moving to interpretations (and later conclusions), we once again draw attention to the challenges and limitations of this research. These are detailed in Chapter 1 of this report and will not be repeated here. Overall, though, it is clear that our interpretations and conclusions are based less on rigorous scientific proof of causal relationships than on examining the preponderance of evidence. Not unlike much social science research, we cannot account and control for all possible variables. Like most research based on secondary data, we are limited by the quality and nature of the data over which we have no control. Examining behaviors and events of people over long periods of time requires years of consistent data, of which we have only limited ranges. With these caveats in mind, we present these interpretations.

We can see from the data that in their early adult years, individuals who are arrested for minor consuming offenses tend to have court cases for driving under the influence (or a related charge) at a rate of at least 24%. We say “at least” because our numbers do not include potential arrests at times outside the range of our data. Indeed, if we consider that more than 50% of all DUI offenses are committed by individuals over 31 years of age, then it is clear that our limited examination does not give us the full picture. There appears to be a strong likelihood that the 24% figure would be substantially higher.

The issue of repeat offenders is also an important one. The data suggests that individuals with multiple offenses have a greater likelihood than those with single offenses to go on to DUI offenses, however, we do not have the data to support conclusions one way or the other regarding whether individuals with minor consuming cases go on to have multiple DUI cases at a greater rate than the general population.

Based on the analysis conducted comparing the subset of the population with minor consuming arrests in their background with the general population on an annual basis, we conclude that having a minor consuming arrest is a risk factor for having an arrest for driving under the influence of alcohol. A person with a minor consuming arrest in their background is more likely to have a DUI case in any given year for ages 20 through 31 with the difference more pronounced in the early 20s. It is important, though, to note the distinction that this does not mean that individuals who consume alcohol as minors are more likely to drive while intoxicated later. This comparison is simply a comparison of arrest trends, which can be impacted by other factors.

## **CHAPTER 4 - CONCLUSIONS AND SUGGESTED RESEARCH**

### **General Recommendations and Applications**

The value of this analysis is in helping to inform policy related to treatment or consequences for youth with minor consuming offenses. When a youth is apprehended for minor consuming, this presents society with an opportunity to act in an effort to prevent future offenses that typically carry much greater personal and societal consequences.

### **Conclusions**

The preponderance of evidence suggests that at least 24.4% of all youth that have court cases for minor consuming alcohol go on to have at least one DUI offense prior to their 31<sup>st</sup> birthday. We must also consider, though, that we have no data that allows us to assess whether that percentage grows substantially if we consider time horizons longer than the 31<sup>st</sup> birthday. The evidence from the general DUI population, which is consistent with national research, suggests that the frequency of DUI offenses continues at a relatively high pace until after an individual reaches their late 40s. This suggests that the 24.4% figure is very conservative.

With regard to individuals with multiple versus single cases for minor consuming, there is no evidence to confirm that those with multiple offenses are any more likely to have a DUI offense later than the individual with only a single offense.

On an annual basis, people up through age 31 who have a minor consuming case in their background have a higher probability of having a driving under the influence case with that difference more pronounced for ages 20 through 24. In this particular age group, the likelihood of a DUI case is nearly double for someone with a minor consuming arrest compared to the same age group in the general population.

### **Suggested Research**

Aside from the problem of data quality, the single biggest limitation in this research was the timing and age constraints. The approach and design of the research limited us to examining only those individuals with minor consuming offenses that had a DUI offense before age 31.

In order to get a more complete picture, I recommend additional research over a multi-year period of time in which every DUI offender during the research period be investigated with regard to background (criminal records check and personal interview). This would allow us to capture important background information on individuals over 31 years of age.

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