

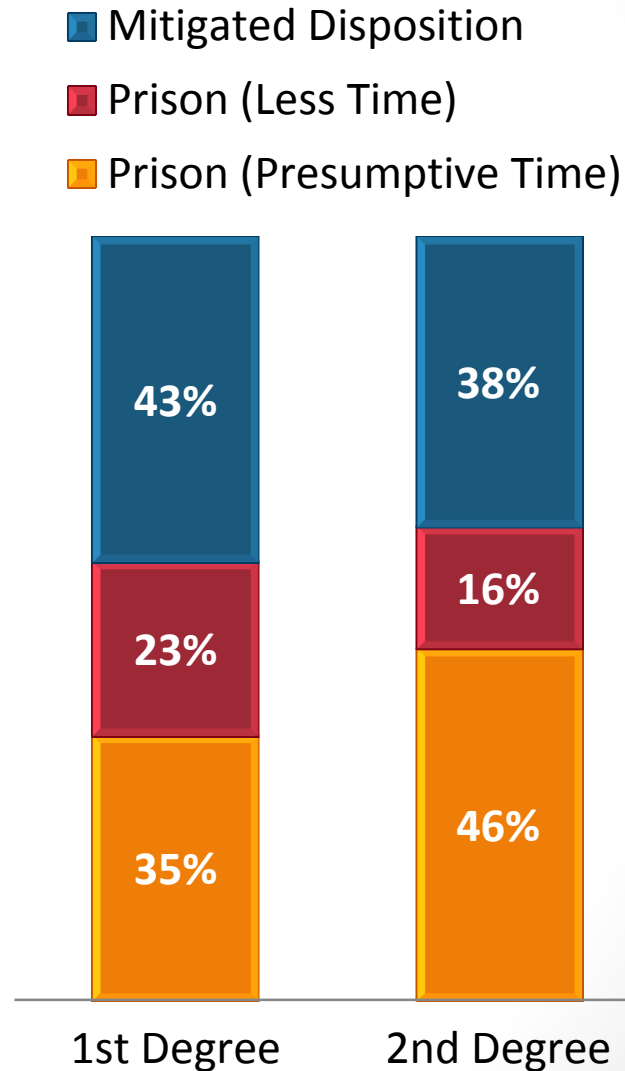
# Regression Model of 1<sup>st</sup> and 2<sup>nd</sup> Degree Controlled Substance Offenses

Minnesota Sentencing Guidelines Commission

March 20, 2014

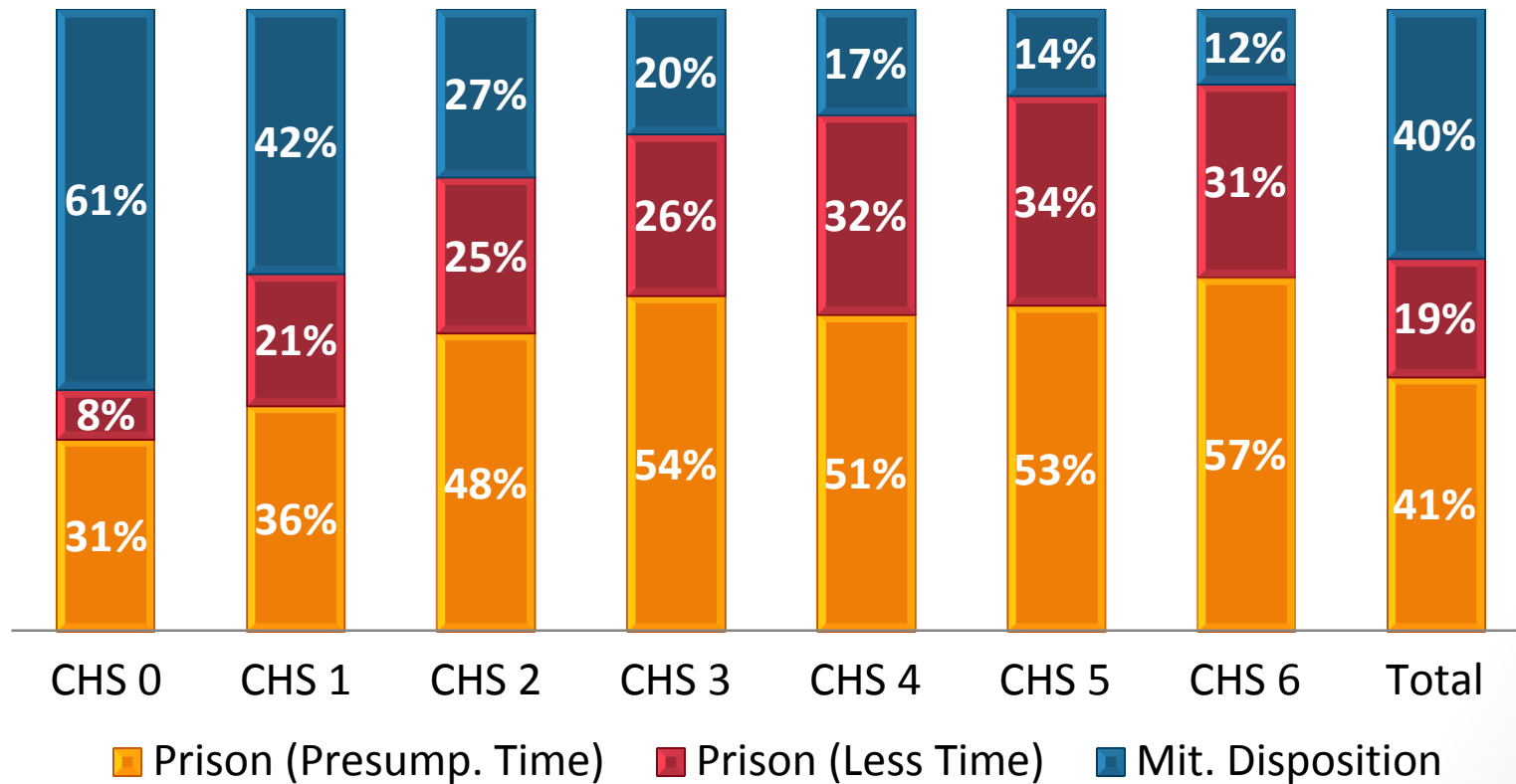
# Recap of Departure Trends

- From 2009 to 2012, less than half 1<sup>st</sup>- and 2<sup>nd</sup>-Degree Controlled Substance Offenders received the Guidelines sentence.
- Descriptive statistics were used to demonstrate that departure rates were very high.



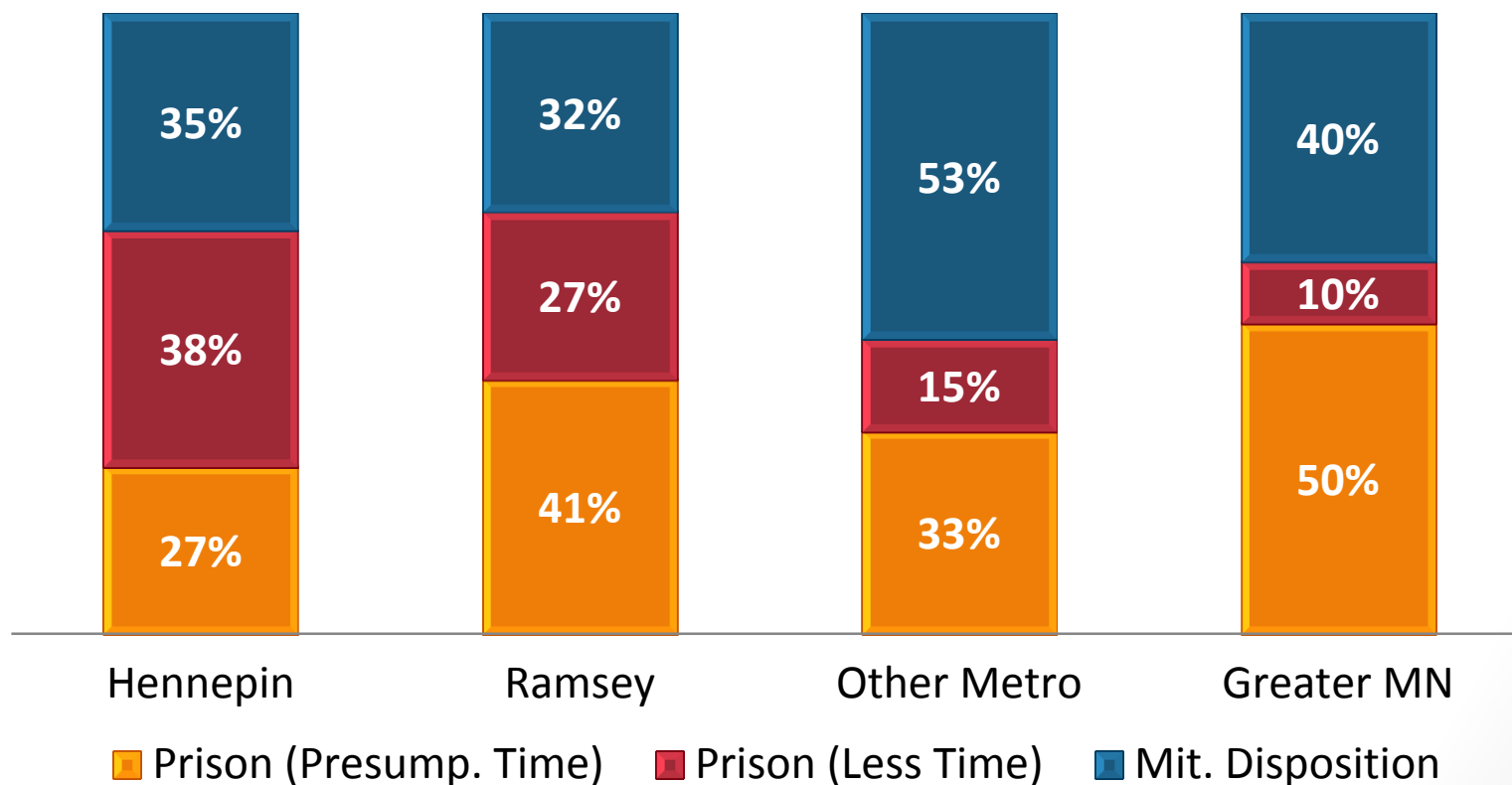
# Recap of Departure Trends: 2009-2012

- Descriptive statistics were also used to show that rates varied by an offender's criminal history score (CHS).



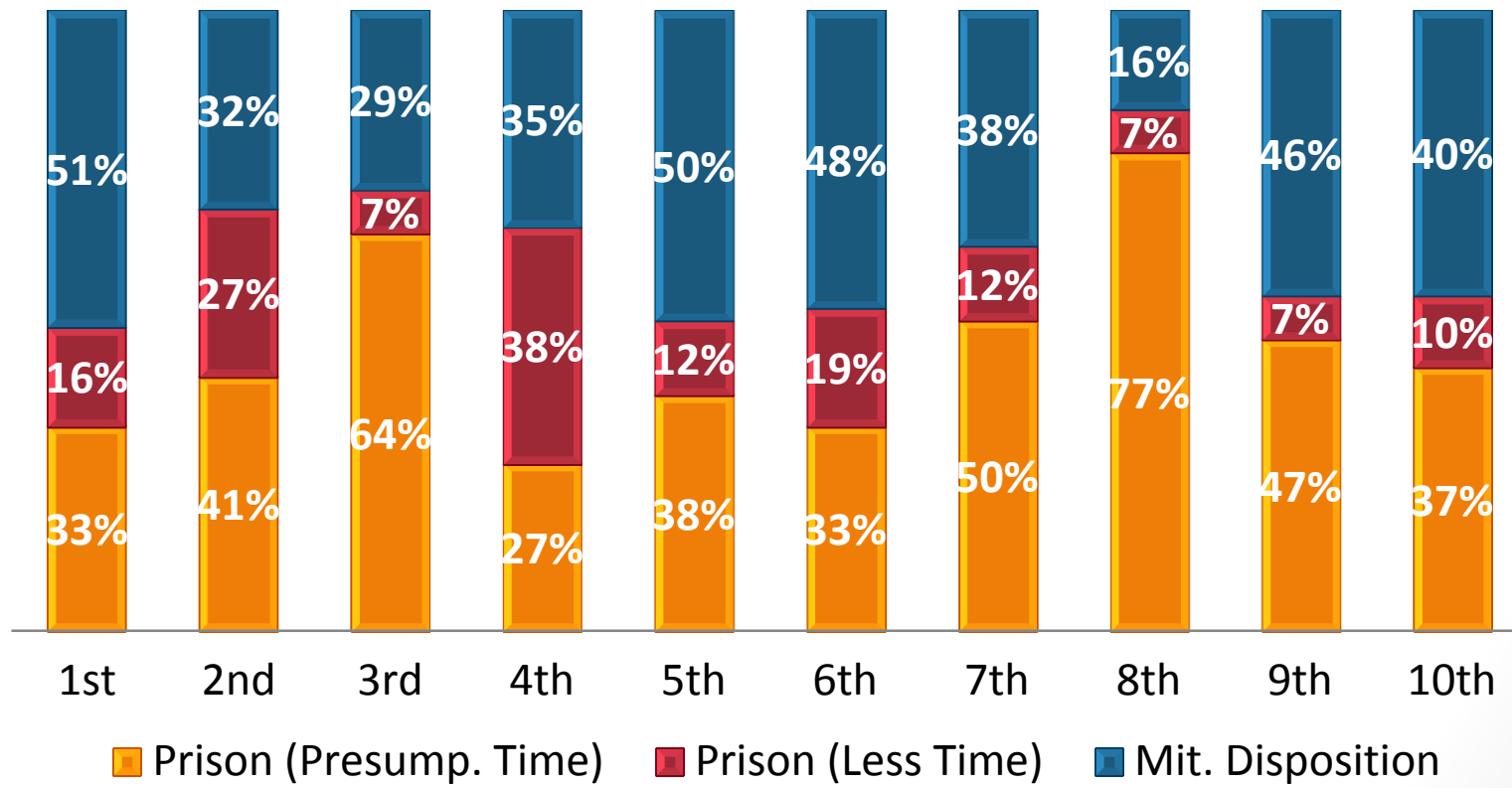
# Recap of Departure Trends: 2009-2012

- And varied by where in the state the defendant was sentenced.



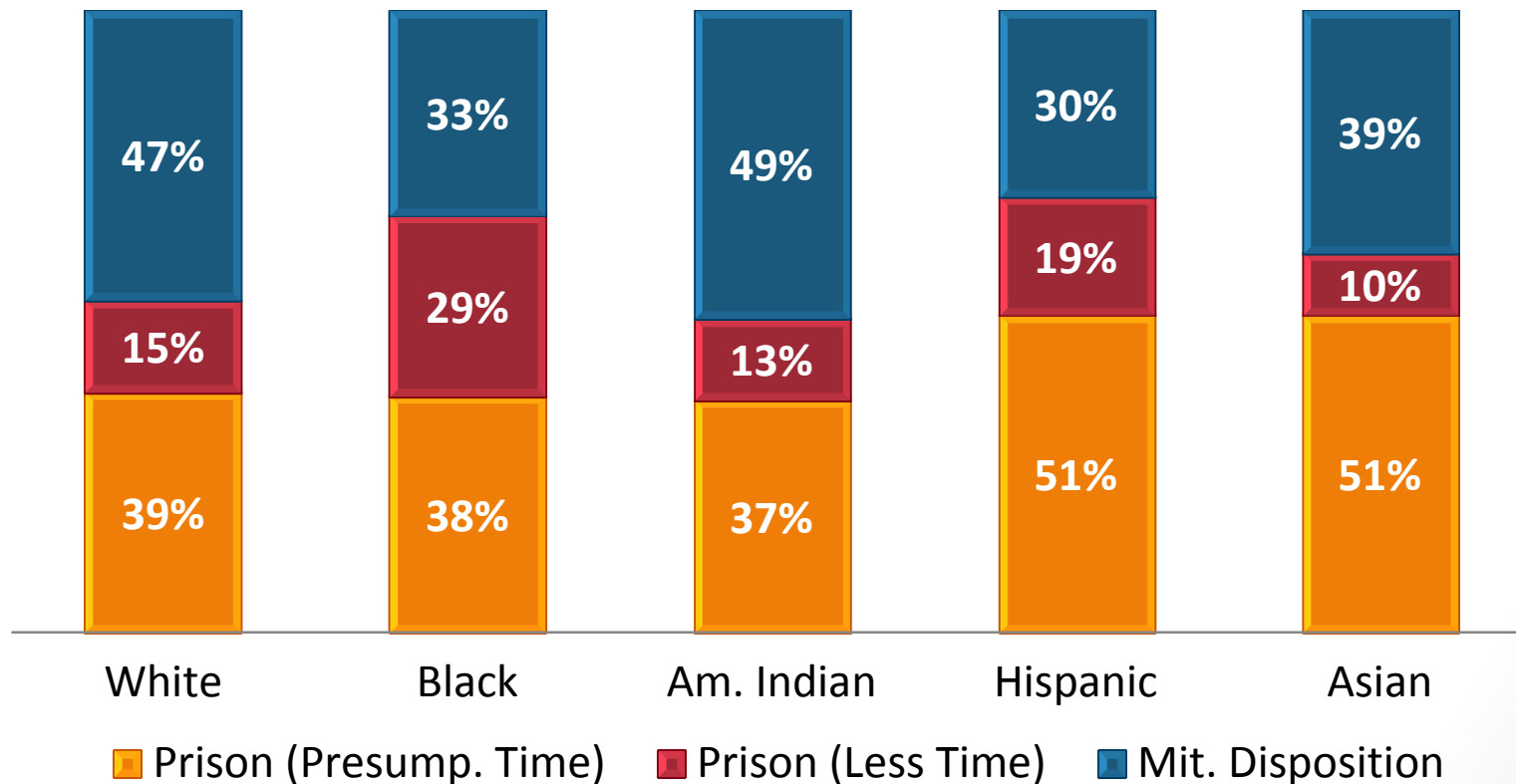
# Recap of Departure Trends: 2009-2012

- The variation in departure rates by judicial district was even greater than by region.



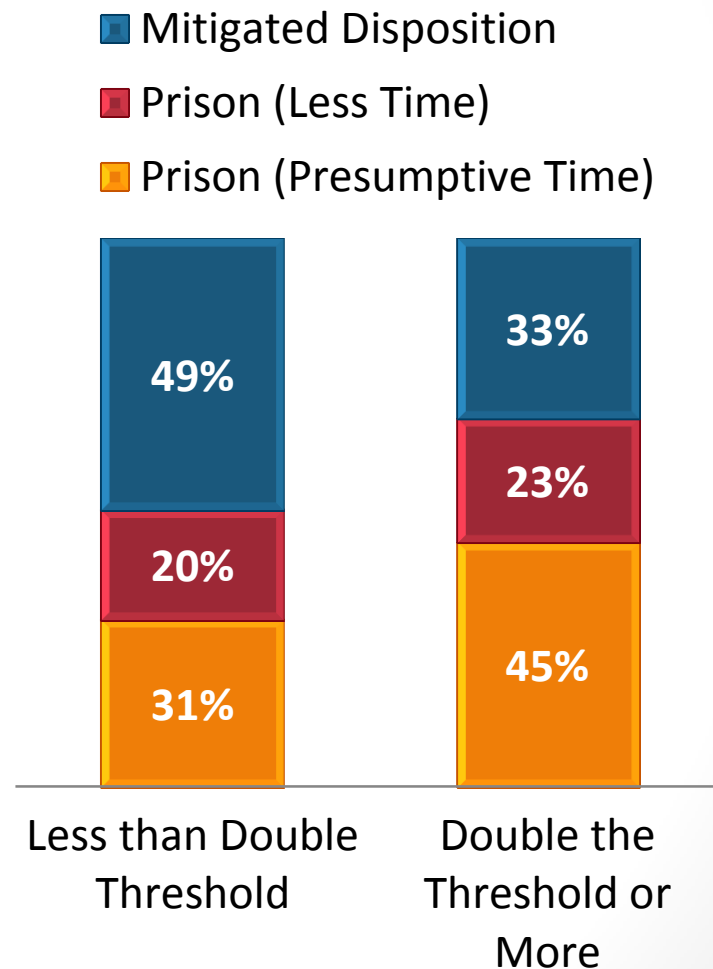
# Recap of Departure Trends: 2009-2012

- Departure rates varied by the defendant's race.



# Recap of Drug Amount Data Collection: 2011 Cases

- Data collection from criminal complaints of 488 defendants sentenced in 2011 demonstrated that departure rates varied by the controlled substance amount either being less than double the threshold or double the threshold or more.



# Descriptive Statistics vs. Regression

- Descriptive statistics showed summary findings about how departures vary, but they cannot be used to explain the significance of the relationships or their interactions.
- Logistic Regression can be used to predict the odds of the outcome of the dependent variable (e.g., how likely is a person to receive a departure?) based on independent variables. For example, does an offender's criminal history predict a departure? Does where the offender was sentenced predict a departure? Does race/ethnicity matter?



# Revisiting the Research Question

- What is the likelihood that an offender will receive a departure (dispositional or durational)?
- Population: 1<sup>st</sup>- and 2<sup>nd</sup>- controlled substance offenders sentenced in 2011 (N=488)
- Dependent Variable: Departure (No=192/Yes=296)
- Independent Variables (predictors) were picked based on theory, descriptive statistics, and available data:
  - Race/Ethnicity
  - Criminal History Score
  - Controlled Substance Amount
  - MN Judicial District

## Model 1. Summary of Effects for Race, Criminal History Score and Drug Amounts

- Compared to whites, Hispanic offenders were 61.3% less likely to get departures. This is statistically significant; the probability of this relationship being due to chance is unlikely.
- Those with criminal history scores of 1 or more were 65.2% less likely to get departures.
- Offenders with double the threshold amount or more were 40.3% less likely to get departures.

Variables	Direction of Correlation	% Change in Odds	Significance *p<.05 **p<.01	
(Compared to White Offenders)				
Race/Ethnicity=Black	Positive	20.4%	.455	
Hispanic	Negative	-61.3%	.000	**
Other include Am. Indian, Asian	Negative	-26.2%	.410	
CHS =1 or more	Negative	-65.2%	.000	**
Double Threshold or more	Negative	-40.3%	.013	*

## Model 2: Summary of Effects for Judicial District, Criminal History Score and Drug Amounts

- Compared to the 10<sup>th</sup> Judicial District, offenders sentenced in the 3<sup>rd</sup> and 8<sup>th</sup> districts were less likely to get departures while offenders in the 4<sup>th</sup> district were 129.1% more likely to get departures.
- Offenders with criminal history scores of 1 or more were 56.7% less likely to get departures.
- Offenders with double the threshold amount or more were 40.4% less likely to get departures.

Displaying Only Significant Variables	Direction of Correlation	% Change in Odds	Significance * p<.05 ** p<.01
(Compared to the 10 <sup>th</sup> District)			
3 <sup>rd</sup> District	Negative	-78.2%	.004**
4 <sup>th</sup> District	Positive	129.1%	.033*
8 <sup>th</sup> District	Negative	-71.7%	.026*
CHS=1 or more	Negative	-56.7%	.000**
Double Threshold or more	Negative	-40.4%	.017*

## Model 3: Summary of Effects for Race, Judicial District, Criminal History Score and Drug Amounts

- Compared to whites, Hispanic were 64.4% less likely to get departures.
- Compared to the 10<sup>th</sup> Judicial District, offenders sentenced in the 3<sup>rd</sup> and 8<sup>th</sup> districts were less likely to get departures while offenders in the 4<sup>th</sup> district were more likely.
- Offenders with criminal history scores of 1 or more were 65.3% less likely to get departures and offenders with double the threshold amount or more were 38.1% less likely to get departures.

Displaying Only Significant Variables	Direction of Correlation	% Change in Odds	Significance	* p<.05 ** p<.01
(Compared to White Offenders) Race/Ethnicity=Hispanic	Negative	-64.4%	.000	**
(Compared to the 10 <sup>th</sup> District) 3 <sup>rd</sup> District	Negative	-72.4%	.017	*
4 <sup>th</sup> District	Positive	152.2%	.022	*
8 <sup>th</sup> District	Negative	-72.2%	.029	*
CHS=1 or more	Negative	-65.3%	.000	**
Dbl Threshold or >	Negative	-38.1%	.030	*

# Summary of Significant Results

1. Compared to whites, Hispanic offenders were less likely to receive departures. This was the only statistically significant effect for race/ethnicity.
2. Offenders with criminal history scores of 1 or more were less likely to get departures.
3. Offenders with double the controlled substance threshold amount or more were less likely to get departures.
4. Compared to the 10<sup>th</sup> Judicial District, offenders sentenced in the 3<sup>rd</sup> and 8<sup>th</sup> judicial districts were less likely to get departures while offenders in the 4<sup>th</sup> Judicial District were twice as likely to get departures.

# Regression Model of 1<sup>st</sup> and 2<sup>nd</sup> Degree Controlled Substance Offenses

[mn.gov/sentencing-guidelines](http://mn.gov/sentencing-guidelines)