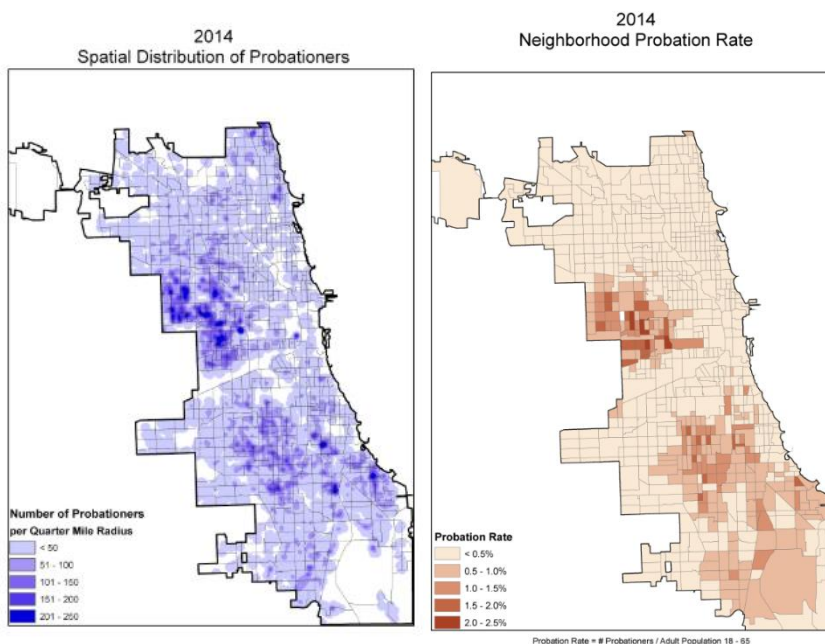# A SPATIAL ANALYSIS OF PROBATION IN CHICAGO, ILLINOIS
EXECUTIVE SUMMARY
Kathryn Bocanegra, LCSW, PhD

Law enforcement agencies have been using spatial analyses to inform crime prevention strategies for over a century. In the past 20 years spatial data on incarceration trends (prison admissions) and parole (prison exits) has similarly been analyzed. Notably absent from this trend is a spatial analysis of probation. Probation is the leading form of correctional control, however relatively little is known about the impact of probation on individual behavior, effectiveness in deterring crime, or its impact on communities and public safety. The following overview provides a basic summary on the following; a) where are probationers residing in Chicago? b) what is the relationship between community context and probation outcomes? c) what is the relationship between probation supervision and neighborhood dynamics over time?

Spatial Patterning of Probationers in Chicago, IL

2014
Spatial Distribution of Probationers

Number of Probationers
per Quarter Mile Radius
< 50
51 - 100
101 - 150
151 - 200
201 - 250

2014
Neighborhood Probation Rate

Probation Rate
< 0.5%
0.5 - 1.0%
1.0 - 1.5%
1.5 - 2.0%
2.0 - 2.5%

Probation Rate = # Probationers / Adult Population 18 - 65

Key Observations

- *Probationers are clustered in a discrete set of spatially contiguous neighborhoods. The spatial patterns observed are stable over time, even as the number of closed cases has decreased over time*
- *The spatial patterns observed are not random*
- *In Chicago probationers are concentrated in neighborhoods with the highest rates of poverty and violent crime where the majority of residents are African American*

Probation Outcomes in Context

Summary of Multilevel Modeling Results:
Generalized Linear Mixed Models

Predictor	B	SE B	T	Odd Ratio
Individual- Level Characteristics				
LSI-R Score	0.02 **	0.002	89.07	1.02
Gender (Male)	-0.40 **	0.04	122.41	0.67
Race/ Ethnicity (White)				
Other	-0.05	0.17	-0.30	0.68
African American	0.37 **	0.06	6.31	1.44
Hispanic	-0.19 **	0.06	-3.23	0.83
Age	-0.03 **	0.001	450.27	0.98
Neighborhood-Level Characteristics				
Violent Crime Rate	-0.002	0.003	0.39	0.99
Residential Stability	-0.02	0.02	1.21	0.98
Concentrated Disadvantage	0.11	0.03	16.07	1.11
Racial/ Ethnic Diversity	-0.06 *	0.05	1.53	0.95
Probation Rate	0.03**	0.005	33.24	1.03

*$p < 0.05$, **$p < 0.001$

Key Observations
- *The models are limited in providing robust predictors of one's probation outcomes*
- *Acknowledging these limitations, there is evidence that neighborhood context is associated with one's probation outcomes*
- *More specifically, a probationer is more likely to have a negative discharge if they reside in a segregated neighborhood with a higher concentration of probationers*

Autoregressive Cross-Lagged Models
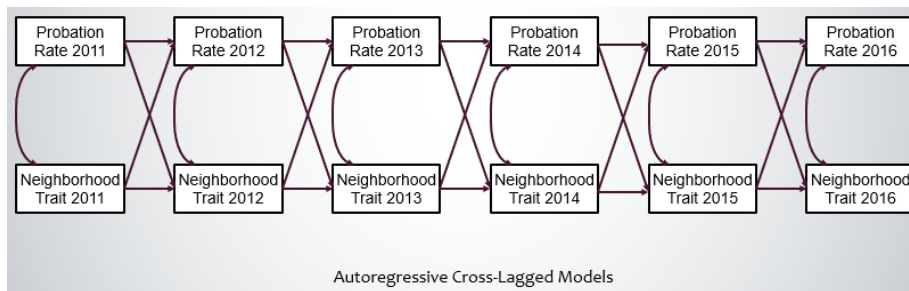
Probation and Neighborhoods

Key Observations
- *Analyses focused on the following neighborhood traits: concentrated disadvantage*, residential stability, racial/ ethnic diversity, violent crime**
- *A bidirectional/ cyclical effect was observed with concentrated disadvantage, violent crime, and probation supervision; e.g. violent crime rates predict probation supervision rates, and probation supervision rates predict violent crime rates over time*
- *This study is a critical first step in examining how the community corrections system is a key institution in the social and economic life of poor urban neighborhoods*