

POLICING BY IMPOSITION: THE CONSEQUENCES OF AGGRESSIVE DRUG POLICING ON PRENATAL CARE IN STRUCTURALLY DISADVANTAGED COMMUNITIES

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ABSTRACT

Historically in the United States, the police have been organized as a publicly accountable, rule of law institution. In theory, this has meant that police engage in partnership with the public to set crime prevention and public safety goals. Since the decline of industrialization in America's urban centers, however, the police – particularly in racially isolated, structurally disadvantaged communities – have increasingly moved from a model of “liberal consent” or “democratic” policing to one that emphasizes authoritarianism and the imposition of crime control tactics. This increasingly coercive brand of policing has, in many communities, resulted in a loss of legitimacy and cooperation and caused the police to be viewed as something akin to an environmental hazard – i.e., something to be avoided.

Research in community health often shows structural disadvantage to be among the strongest covariates of health behaviors, often as a result of the social isolation that accompanies severe and sustained systemic resource deprivation. Criminology and justice researchers have documented the collateral effects of aggressive arrest strategies (e.g., increased crime, decreased trust in police) on disadvantaged communities, perhaps due to the perceived legal marginalization that results from those strategies. This study integrates these research traditions to examine the extent to which aggressive drug enforcement was associated with decreased prenatal care utilization among pregnant women residing in communities across the District of Columbia. The study is grounded primarily in the urban ecological/sociological perspectives that anticipate the social isolation effects of neighborhood disadvantage, and assumes that as distrust for formal institutions increases, use of traditional healthcare resources should decrease. The study combined data from the Department of Health, U.S. Census Bureau, and the Metropolitan Police Department in Washington, D.C. to examine several multilevel hypotheses related to drug enforcement and prenatal health behaviors.

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INTRODUCTION

When the British Parliament passed the London Metropolitan Police Act in 1829, it created a model of “liberal consent” policing that much of the Western world—including the United States—replicated. Unlike other systems, policing by consent creates a partnership with the public that offers members of constituent communities a stake in creating effective policing strategies while simultaneously giving them the authority to hold the police accountable for alleged misconduct or breaches of professionalism.¹ Indeed, the spirit of public accountability resides at the core of the American policing paradigm, given that most U.S. police departments are authorized at the municipal level.² Following the decline of industrialization in America’s urban centers, policing by consent has arguably given way to something more akin to policing by imposition, where police officers in some urban neighborhoods are directed by external constituents, such as local business owners, residents outside fo-

1. See Willem De Lint, *Autonomy, Regulation and the Police Beat*, 9 SOC. & LEGAL STUD. 55, 55 (2000).

2. See SAMUEL WALKER & CHARLES KATZ, *THE POLICE IN AMERICA: AN INTRODUCTION* 26 (8th ed. 2013).

cal communities, and politicians, to engage in aggressive law enforcement in the name of crime control.³

To the extent that aggressive arrest strategies are imposed on neighborhoods either without community consent or without meaningful consultation, police officers—indeed, entire police departments (e.g., Ferguson, Baltimore, Chicago)—can lose legitimacy to the point that community members halt any cooperation they may have once given the police, generally in the form of information sharing about crimes, drugs, and guns.⁴ As a result, crimes that may have been prevented are allowed to occur. Moreover, given the aggressive stop and frisk activities that often occur in racially isolated, structurally disadvantaged communities,⁵ as well as corner sweeps and drug arrests,⁶ many residents of such communities may come to regard the police as an environmental hazard⁷—something to be avoided, much like oil spills, airline crashes, and severe weather events.⁸

Research has shown that health behaviors are also susceptible to hazardous environmental conditions, such as poverty, violence,⁹ and even distrust of formal institutions—all of which may discourage residents from accessing primary health care. To the extent that policing may represent an environmental hazard, and that health behaviors are influenced by certain environmental risks, the question then becomes, to what extent might certain police practices lead

3. See generally Robert J. Kane, *Social Control in the Metropolis: A Community-Level Examination of the Minority Group-Threat Hypothesis*, 20 JUST. Q. 265, 268 (2003); Brian J. Stults & Eric P. Baumer, *Racial Context and Police Force Size: Evaluating the Empirical Validity of the Minority Threat Perspective*, 113 AM. J. SOC. 507, 524–25 (2007).

4. Robert J. Kane, *Compromised Police Legitimacy as a Predictor of Violent Crime in Structurally Disadvantaged Communities*, 43 CRIMINOLOGY 469, 469–71 (2005) [hereinafter Kane, *Police Legitimacy*]; Lorraine Mazerolle et al., *Shaping Citizen Perceptions of Police Legitimacy: A Randomized Field Trial of Procedural Justice*, 51 CRIMINOLOGY 33, 34–35 (2013); Tom R. Tyler, *Enhancing Police Legitimacy*, 593 AM. ACAD. POL. SOC. SCI. 84, 84–85 (2004).

5. Andrew Gelman et al., *An Analysis of the New York City Police Department's "Stop-and-Frisk" Policy in the Context of Claims of Racial Bias*, 102 J. AM. STAT. ASS'N 813, 815–17 (2007).

6. Robert J. Kane, *The Ecology of Unhealthy Places: Violence, Birthweight, and the Importance of Territoriality in Structurally Disadvantaged Communities*, 73 SOC. SCI. & MED. 1585 (2011) [hereinafter Kane, *Unhealthy Places*]; Jeffrey D. Morenoff, *Neighborhood Mechanisms and the Spatial Dynamics of Birth Weight*, 108 AM. J. SOC. 976 (2003).

7. See Robert J. Kane, *On the Limits of Social Control: Structural Deterrence and the Policing of "Suppressible" Crimes*, 23 JUST. Q. 186, 188–90 (2006).

8. Baruch Fischhoff, *Understanding Long-Term Environmental Risks*, 3 J. RISK & UNCERTAINTY 315 (1990); Michael R. Edelstein, *When the Honeymoon is Over: Environmental Stigma and Distrust in the Siting of a Hazardous Waste Disposal Facility in Niagara Falls, New York*, 5 RES. SOC. PROBS. & PUB. POL'Y 75, 78–79 (1993); KAI ERIKSON, *A NEW SPECIES OF TROUBLE: THE HUMAN EXPERIENCE OF MODERN DISASTERS* (1994).

9. Kane, *Unhealthy Places*, *supra* note 6; Morenoff, *supra* note 6.

to reductions in health promoting behaviors in certain communities? The present study addresses this question.

I. BACKGROUND

A. *The Emerging Phenomenon of Policing by Imposition*

In its purest—or perhaps most theoretical—form, liberal consent policing represents a form of democratic social control that invites public participation and creates an infrastructure for public accountability.¹⁰ Community residents work in partnership with their police agencies to develop commonly agreed-upon strategies of law enforcement and public safety interventions.¹¹ The key concept is partnership, which came to define—at least theoretically—much of the community policing paradigm that emerged during the 1980s and 1990s, and which appeared to have had a positive impact on neighborhoods.¹² Even at its worst, or perhaps at its least effective, a system of democratic policing should still produce neutral consequences for communities. That is, without the police in a given community, the life chances of people living in that community are X. When the police enter that community, the life chances of residents in that community become Y. In a democratic system of policing, Y should never be less than X.

Yet, since the late 1990s and into the twenty-first century, a new version of “community policing” has developed, which emphasizes the aggressive enforcement of public order and misdemeanor drug crimes, under the assumption that arresting low-level offenders will decrease serious crime.¹³ In this sense, the ideals of community po-

10. See De Lint, *supra* note 1, at 55–56.

11. See *id.* at 70. Whether policing in this form has ever actually existed in the United States is debatable. The point is, democratic policing, which is guided by the rule of law and the accessibility to external mechanisms of accountability—e.g., the courts, citizen review boards where applicable, and even the media—provides a compelling framework that should allow the police to leave neighborhoods much better off than when they found them.

12. See Charlotte Gill et al., *Community-Oriented Policing to Reduce Crime, Disorder and Fear and Increase Satisfaction and Legitimacy Among Citizens: A Systematic Review*, 10 J. EXPERIMENTAL CRIMINOLOGY 399, 400–02 (2014).

13. Judith A. Greene, *Zero Tolerance: A Case Study of Police Policies and Practices in New York City*, 45 CRIME & DELINQ. 171, 175 (1999); Richard Rosenfeld et al., *The Impact of Order-Maintenance Policing on New York City Homicide and Robbery Rates: 1988-2001*, 45 CRIMINOLOGY 355, 355–56 (2007). *But see* Robert J. Kane & Shea W. Cronin, *Associations Between Order Maintenance Policing Associations and Violent Crime: Considering the Mediating Effects of Residential Context*, 59 CRIME & DELINQ. 910, 924–25 (2009) (finding that policing “disorder” crimes in highly residential communities had virtually no effect on violent crime, but instead “order maintenance” policing in highly public locations seemed to have the greatest crime reduction

licensing, which were rooted in democratic principles, have given way to “authoritarianism,”¹⁴ or what might be referred to as *policing by imposition*. That is, under the evolving model of order maintenance policing, residents of certain communities—i.e., those characterized by racially isolated structural disadvantage—have become subjected to certain police strategies, such as aggressive streetcorner drug enforcement, whereas previously they may have enjoyed more voice in determining the form and extent of such police interventions.¹⁵ This is not, however, to suggest that the 1980s and early 1990s were the “good old days” of American policing. Rather, during the initial years of the burgeoning community policing movement, scholars and theorists tended to emphasize partnership,¹⁶ problem-solving,¹⁷ and the “coproduction of safety,”¹⁸ largely as a response to the brutality of 1960s anti-riot policing.¹⁹

Nevertheless, this emerging form of community—or more precisely, “zero-tolerance”—policing,²⁰ which emphasizes aggressive stop and frisk and streetcorner arrests, may be detrimental to a community’s well-being, particularly if the policing strategies alienate residents and lead to more violence. Indeed, the extant research on the policing of drug markets in urban locations—though largely mixed—produces a preponderance of findings suggesting that drug enforcement actually causes violent crime to increase, largely due to the power vacuums created when the police pull well-established corner dealers from their local markets.²¹ Thus, even when the police engage in strategies and tactics that are both legal and socially expected, particularly by those who reside outside the ghetto, deleterious effects that compromise health can occur. Under such circum-

effect, perhaps because in such places few visitors feel authorized to take responsibility for the space, leaving peacekeeping largely to the police).

14. Willem De Lint, *Police Authority in Liberal-Consent Democracies: A Case for Anti-Authoritarian Cops*, in *THE OXFORD HANDBOOK OF POLICE AND POLICING* 217, 218–19 (Michael D. Reisig & Robert Kane eds., 2014).

15. See Rosenfeld et al., *supra* note 13, at 370 (discussing whether New York City order maintenance strategy targeted disadvantaged and minority communities).

16. See Robert C. Trojanowicz & David Carter, *The Philosophy and Role of Community Policing*, NAT’L CENTER FOR COMMUNITY POLICING (1988), <http://msucj.bcpdev.com/assets/Outreach-NCCP-GB14.pdf>.

17. See HERMAN GOLDSTEIN, *PROBLEM-ORIENTED POLICING* (1990).

18. WESLEY G. SKOGAN & SUSAN M. HARTNETT, *COMMUNITY POLICING, CHICAGO STYLE* (1999).

19. See HERMAN GOLDSTEIN, *POLICING A FREE SOCIETY* (1977).

20. Greene, *supra* note 13, at 175.

21. Werb et al., *Effect of Drug Enforcement on Drug Market Violence: A Systematic Review*, 22 INT’L J. DRUG POL’Y 87, 91–92 (2011).

stances, and as Kane noted,²² the very communities in greatest need of protection *by* the police are also in great need of protection *from* the police.

B. Prenatal Care as an Important Health Behavior

The United States has one of the highest rates of preterm and/or low birthweight among developed nations with nearly one in ten children born prematurely.²³ A comprehensive report by the Institute of Medicine (IOM) estimated that the annual societal cost of preterm births—including the costs of neonatal intensive care, long-term follow up, and disability—was \$51 billion.²⁴ More importantly, the report highlighted the long-term health sequelae for child and mother include possible neurodevelopmental delays and/or disabilities in the child, and maternal depression and/or psychological distress.²⁵

In order to optimize maternal/fetal birth outcomes—which are frequently directly linked to low birthweight and preterm deliveries—the American College of Obstetricians and Gynecologists (ACOG) recommends women seek out prenatal care as soon as they find out they are pregnant.²⁶ Prenatal care allows for the early identification of maternal/fetal problems, as well as close monitoring of those pregnancies identified as high risk.²⁷ Adequate prenatal care also decreases the risk for preterm birth, low birthweight babies, and neonatal death.²⁸ Despite several public health campaigns by the March of Dimes, ACOG, and the CDC to educate and encourage

22. See Robert J. Kane, *The Social Ecology of Police Misconduct*, 40 CRIMINOLOGY 867, 887–88 (2002).

23. *Preterm (Premature) Labor and Birth*, AM. C. OBSTETRICIANS & GYNECOLOGISTS (Sept. 2015), <https://www.acog.org/-/media/For-Patients/faq087.pdf?dmc=1&ts=20160510T1608243084>.

24. INSTITUTE OF MEDICINE COMMITTEE ON UNDERSTANDING PREMATURE BIRTH AND ASSURING HEALTHY OUTCOMES, *PRETERM BIRTH: CAUSES, CONSEQUENCES, AND PREVENTION* (Richard L. Behrman & Adrienne Stith Butler eds., 2007), available at www.nap.edu/catalog/11622/preterm-birth-causes-consequences-and-prevention.

25. *Id.*

26. *Preterm (Premature) Labor and Birth*, *supra* note 23.

27. See generally Dorothy Brooten et al., *Women with High-Risk Pregnancies, Problems, and APN Interventions*, 39 J. NURSING SCHOLARSHIP, 349, 350 (2007) (discussing a link between prenatal monitoring and a decrease in the number of low birthweight infant births).

28. See Xi-Kuan Chen et al., *Adequacy of Prenatal Care and Neonatal Mortality in Infants Born to Mothers with and Without Antenatal High-Risk Conditions*, 47 AUST. & N.Z. J. OBSTETRICS & GYNECOLOGY 122, 124–25 (2007).

women to seek prenatal care, nearly 30% of women still receive late and/or inadequate care.²⁹

C. Environmental Correlates of Health Behaviors and Prenatal Care

Health science researchers have long recognized that health behaviors are largely influenced by environment. Indeed, The Community Preventive Services Task Force's Social Environment and Health Model identified several ecological determinants of health, including social institutions, social norms, and physical environment.³⁰ Social institutions can be a barrier to engaging in healthy behaviors when they foster feelings of distrust or frustration with healthcare providers. For example, in focus groups with hypertensive low-income participants, researchers found that distrust of healthcare providers along with longstanding issues of racism were powerful motivators for medication nonadherence.³¹ Similarly, in a study of a group of hypertensive African American adults, distrust of physicians and the pharmaceutical industry along with poor communication with one's physician were important reasons for medication nonadherence.³² Scholars have also found in both black and white patients that past experiences with discrimination predicted delays in seeking medical care and adherence to regimens.³³

The research on the effects of neighborhood safety and disorder on health behaviors, on the other hand, has produced some mixed results. For example, several studies demonstrated a significant effect on adult physical activity,³⁴ adult drinking and smoking,³⁵ preg-

29. *Healthy People 2020: Maternal, Infant and Child Health Details, MICH-10.2*, OFF. DISEASE PREVENTION & HEALTH PROMOTION (2011), <https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives>.

30. Laurie M. Anderson et al., *The Community Guide's Model for Linking the Social Environment to Health*, 24 AM. J. PREVENTIVE MED. 12, 12 (2003).

31. Lisa M. Lewis et al., *Medication Adherence Beliefs of Community-Dwelling Hypertensive African Americans*, 25 J. CARDIOVASCULAR NURSING 199, 203 (2010).

32. Petra Lukoschek, *African Americans' Beliefs and Attitudes Regarding Hypertension and Its Treatment: A Qualitative Study*, 14 J. HEALTH CARE FOR POOR & UNDERSERVED 566, 568-76 (2003).

33. Sarah Stark Casagrande et al., *Perceived Discrimination and Adherence to Medical Care in a Racially Integrated Community*, 22 J. GEN. INTERNAL MED. 389, 393 (2007).

34. See Dawn K. Wilson et al., *Socioeconomic Status and Perceptions of Access and Safety for Physical Activity*, 28 ANNALS BEHAV. MED. 20, 26 (2004).

35. See Terrence D. Hill & Ronald J. Angel, *Neighborhood Disorder, Psychological Distress, and Heavy Drinking*, 61 SOC. SCI. & MED. 965, 969 (2005) (heavy drinking); Rebecca Miles, *Neighborhood Disorder and Smoking: Findings of a European Urban Survey*, 63 SOC. SCI. & MED. 2464, 2464-68 (2006) (smoking among individuals age fifteen or older in urban households).

nant women smoking,³⁶ and children's physical activity,³⁷ whereas others have not.³⁸ Specific criticism of the relationship between crime and physical activity, however, includes Foster and Giles-Corti's argument that there has been a lack of specificity in how participants are questioned about their perceptions of neighborhood safety and crime.³⁹ For example, when researchers looked at mothers' perception of neighborhood safety as well as their personal experiences with violence, the researchers found that only exposure to violence had a significantly negative effect on health behaviors.⁴⁰ In response, other studies found that both the participants' perceived safety and police crime reports had a significantly negative effect on adult walking.⁴¹ Then, in a follow-up study, others examined changes over time in murder rate, and also saw significant changes in transport walking.⁴²

As with other health behaviors, women's reasons for late or inadequate prenatal care are associated with social institutions, social norms, and physical environment. Like most women, pregnant African American women desire high quality relationships with their providers, based on respect and compassion.⁴³ Thus, not surprisingly, several studies found that poor relationships with healthcare providers led to poor or inadequate prenatal care. For example, Mil-

36. See Freda Patterson et al., *Neighborhood Safety as a Correlate of Tobacco Use in a Sample of Urban, Pregnant Women*, 37 *ADDICTIVE BEHAV.* 1132, 1134 (2012).

37. See Stephanie H. Kneeshaw-Price et al., *Neighborhood Crime-Related Safety and Its Relation to Children's Physical Activity*, 92 *J. URB. HEALTH* 472, 472 (2015).

38. See Shannon N. Zenk et al., *Neighborhood Environment and Adherence to a Walking Intervention in African American Women*, 36 *HEALTH EDUC. & BEHAV.* 167, 167 (2009) (finding no association between neighborhood environment and adherence to a walking intervention); April Y. Oh et al., *Effects of Perceived and Objective Neighborhood Crime on Walking Frequency Among Midlife African American Women in a Home-Based Walking Intervention*, 7 *J. PHYSICAL ACTIVITY & HEALTH* 432, 432 (2010) (finding no association between perceived and objective levels of neighborhood crime and adherence to a walking intervention).

39. See Sarah Foster & Billie Giles-Corti, *The Built Environment, Neighborhood Crime and Constrained Physical Activity: An Exploration of Inconsistent Findings*, 47 *PREVENTIVE MED.* 241, 248-49 (2008).

40. Sarah Lindstrom Johnson et al., *Neighborhood Violence and Its Association with Mothers' Health: Assessing the Relative Importance of Perceived Safety and Exposure to Violence*, 86 *J. URB. HEALTH: BULL. N.Y. ACAD. MED.* 538, 538 (2009).

41. E.g., Kelly R. Evenson et al., *Associations of Adult Physical Activity with Perceived Safety and Police-Recorded Crime: The Multi-Ethnic Study of Atherosclerosis*, 9 *INT'L J. BEHAV. NUTRITION & PHYSICAL ACTIVITY* 146, 146 (2012).

42. Zachary Kerr et al., *Changes in Walking Associated with Perceived Neighborhood Safety and Police-Recorded Crime: The Multi-Ethnic Study of Atherosclerosis*, 73 *PREVENTIVE MED.* 88, 91 (2015).

43. See Jody R. Lori et al., *Provider Characteristics Desired by African American Women in Prenatal Care*, 22 *J. TRANSCULTURAL NURSING* 71, 74 (2011).

ligan and colleagues conducted focus groups with marginalized women living in Washington, D.C. and found that uncaring, judgmental clinic staff were important barriers to care, especially among women using drugs.⁴⁴ In a metasynthesis of women from developed countries, Downe, Finlayson, Walsh, and Lavender similarly examined barriers to prenatal care and identified themes of powerlessness, stigma, and “broken confidence” that had stemmed from feelings of disrespect and “being labelled [sic] and judged.”⁴⁵

Living in a distressed neighborhood can also be a barrier to prenatal care. For example, living in neighborhoods with drugs or violence can be a barrier to care where women cope by “just stay[ing] in the house.”⁴⁶ More recently, de Mendoza, Harville, Savage, and Giarratano found that pregnant women’s cumulative exposure to violence—i.e., intimate partner violence and perceived neighborhood violence—increased their odds of depression and PTSD,⁴⁷ which are noted barriers to seeking prenatal care.⁴⁸ Finally, a review of the literature by Feijen-de Jong and colleagues found that women living in neighborhoods with higher levels of unemployment, single-parent families, majority nonwhite populations, and fewer office-based primary care providers were at greatest risk for late initiation of prenatal care or no prenatal care at all.⁴⁹

II. CURRENT STUDY

To demonstrate how a model of policing by imposition might adversely affect certain maternal health behaviors, we report on a study that examined the effects of drug policing on prenatal care in

44. See Renee Milligan et al., *Perceptions About Prenatal Care: Views of Urban Vulnerable Groups*, 2 BMC PUB. HEALTH 25, 25 (2002).

45. S. Downe et al., “Weighing Up and Balancing Out”: A Meta-Synthesis of Barriers to Antenatal Care for Marginalised Women in High-Income Countries, 116 BJOG 518, 525–26 (2009).

46. See Christine L. Savage, *The Culture of Pregnancy and Infant Care in African American Women: An Ethnographic Study*, 18 J. TRANSCULTURAL NURSING 215, 219–20 (2007).

47. Veronica Barcelona de Mendoza et al., *Experiences of Intimate Partner and Neighborhood Violence and Their Association with Mental Health in Pregnant Women*, J. INTERPERSONAL VIOLENCE 1, 1–2 (2015).

48. See Julia S. Seng et al., *Prevalence, Trauma History, and Risk for Posttraumatic Stress Disorder Among Nulliparous Women in Maternity Care*, 114 OBSTETRICS & GYNECOLOGY, 839, 845 (2009) (“Health risk behaviors associated with poor obstetric outcomes were concentrated among the PTSD-affected women, including substance abuse, intimate partner violence, and late prenatal care. Depression also was concentrated in the PTSD-affected groups, with 84.5% of major depressive disorder cases co-occurring with partial, lifetime, or current PTSD.”).

49. Esther I. Feijen-de Jong et al., *Determinants of Late and/or Inadequate Use of Prenatal Healthcare in High-Income Countries: A Systematic Review*, 22 EUR. J. PUB. HEALTH, 904, 910–11 (2011).

Washington, D.C. communities. Drug enforcement is among the most discretionary forms of policing and is almost exclusively driven by the priorities of the police department (partially informed by local politicians and business owners), which may conflict with those of local residents.⁵⁰ In this sense, drug policing may come to represent a local environmental “hazard” to be avoided by pregnant women who should be seeking prenatal care, particularly if aggressive drug enforcement is seen as another form of abuse (analogous to perceived provider discrimination) brought on by a social institution, and/or if drug enforcement causes violent crime to increase. One of our primary points is to explore how it is that legal – perhaps even socially expected – policing interventions might reduce health promoting behaviors, which in the long term may reduce the life chances of those affected.

III. METHODOLOGY

The research was conducted in the District of Columbia (D.C.) using a retrospective panel design that included biannual observations from 2005 through 2007 (n=3 panels). Utilizing a nested strategy, the study combined violent crime data (i.e., known offenses) from the Metropolitan Police Department of the District of Columbia (MPD) and structural indicators from the U.S. Census Bureau (SF3), aggregating them to the census tract level (n=188 tracts*3 panels=1,086 tract observations), which represented the proxy for neighborhood.⁵¹ Note that the study excluded seven census tracts from the analyses because they had very low or no reported residential population, making the calculation of structural characteristics impossible or highly unstable. The study also used birth files from the District of Columbia Department of Health (DOH) for the years 2005 through 2007 (n=22,482 birth events), which included both individual-level factors and the outcome measures of interest. The birth files contained a census tract identifier for each subject, making it possible to link the mothers to their census tracts of residence.

50. *Cf.* Richard Rosenfield et al., *The Impact of Order-Maintenance Policing on New York City Homicide and Robbery Rates: 1988-2001*, 45 *CRIMINOLOGY* 355, 355-56 (2007) (describing effects of order-maintenance policing and arrests on robbery and homicide trends in New York City as “statistically significant but small”).

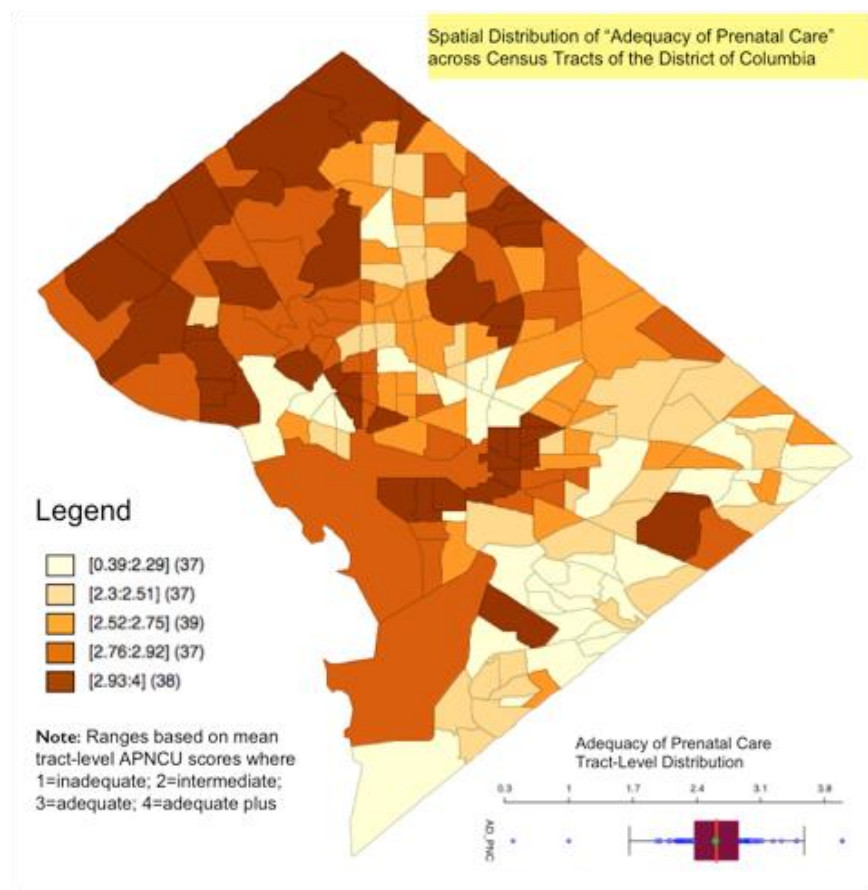
51. *See* Robert J. Sampson et al., *Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy*, 277 *SCIENCE* 918, 920 (1997); Robert J. Sampson & W. Byron Groves, *Community Structure and Crime: Testing Social-Disorganization Theory*, 94 *AM. J. SOC.* 774 (1989); Bonita M. Veysey & Steven F. Messner, *Further Testing of Social Disorganization Theory: An Elaboration of Sampson and Groves’s “Community Structure and Crime”*, 36 *J. RES. CRIME DELINQ.* 156 (1999).

A. Measuring the Dependent Variable: Prenatal Care

Because we measured the variable for prenatal care initiation in weeks rather than months in this population, we first had to recode the variable to fit this “adequacy of prenatal care utilization” (“AP-NCU”) index formula. For example, women who initiated care at twenty weeks were recoded as initiating at five months. Once the month of prenatal care initiated was calculated, the woman received a score for her “adequacy of prenatal care initiation.” The next step was to calculate the “ARPCSI,” i.e., the percentage of expected visits for each case. Expected visits are defined as the number of visits the mother had divided by the number of expected visits after adjusting for when the mother entered into care. That ratio is then multiplied by 100 to get the percentage of visits the mother attended. Once the ARPCSI was calculated, a final score for the APNCU index was derived. Women’s APNCU index was also scored as 1=inadequate, 2=intermediate, 3=adequate, or 4=adequate plus.⁵² Figure 1 shows the spatial distribution of prenatal care across census tracts of the District of Columbia.

52. Milton Kotelchuck, *An Evaluation of the Kessner Adequacy of Prenatal Care Index and a Proposed Adequacy of Prenatal Care Utilization Index*, 84 AM. J. PUB. HEALTH 1414 (1994) (detailing information about how to construct the adequacy of prenatal care scale).

Fig. 1 Spatial Distribution of Adequacy of Prenatal Care across Census Tracts of the District of Columbia (2005–2007)



B. Measuring Neighborhood Context

Following the communities, health, and crime literatures,⁵³ the present study constructed an unweighted additive index of structural disadvantage for each census tract using the following variables: percentage of the residential population and/or households that were Black, in poverty, female-headed with children, receiving

53. Kane, *Unhealthy Places*, *supra* note 6; Ashley Schempf et al., *Neighborhood Effects on Birthweight: An Exploration of Psychosocial and Behavioral Pathways in Baltimore, 1995–1996*, 68 SOC. SCI. & MED. 100 (2009); Morenoff, *supra* note 6; Sampson & Groves, *supra* note 51; Sampson et al., *supra* note 51.

public assistance income, unemployed, and aged twenty-five years or older without a high school diploma. Principal component analysis confirmed that all indicators measured a single underlying construct.⁵⁴ Given the observed spatial distributions of social, economic, and racial composition variables, it was impossible to distinguish the percentage Black residential population from the other indicators of structural disadvantage. Therefore, the composite index may be regarded as a measure of racially-concentrated structural disadvantage (Cronbach's alpha=0.849).

Additionally, the study included an indicator of percentage immigrant population/foreign born to estimate the "ethnic enclave" effect⁵⁵ or "Hispanic Paradox,"⁵⁶ which often anticipates a protective relationship with health behaviors. The study used an unweighted additive index for each tract using percentage foreign born residents, Latino, and linguistic isolation (Cronbach's alpha=0.807). Principal component analysis confirmed that all three variables measured a single underlying construct.⁵⁷

Next, the study included a number of community-level variables that often indicate access to certain health-related or presumed health promoting neighborhood resources. These included the number of primary care centers (PCC) per tract, and neighborhood institutions that provided an infrastructure supportive of social affiliations and information sharing. Institutions included the numbers of schools (K-12 and universities), libraries, neighborhood action groups, recreational facilities, places of worship, and senior citizen centers. The social epidemiology literature often refers to such institutions as "underlying capacities" because they can serve as nodes for the transmission of important community and health information.⁵⁸ The study summed the number of social affiliation institu-

54. The tables are available from the author. The principal component analysis extracted one factor (with the six variables listed above). Eigenvalue=4.31; total model variance explained=71.84%. Variable loadings on the component matrix ranged from .746-.889.

55. E.g., Emily Walton, *Residential Segregation and Birth Weight Among Racial and Ethnic Minorities in the United States*, 50 J. HEALTH & SOC. BEHAV. 427, 427 (2009).

56. Min-Ah Lee & Kenneth F. Ferraro, *Neighborhood Residential Segregation and Physical Health Among Hispanic Americans: Good, Bad, or Benign?*, 48 J. HEALTH & SOC. BEHAV. 131, 132 (2007).

57. The principal component analysis extracted one factor (with the three variables listed above). Eigenvalue=2.41; total model variance explained=80.21%. Variable loadings on the component matrix ranged from 0.816-0.939. Tables available from author upon request.

58. Sandro Galea, Jennifer Ahern & Adam Karpati, *A Model of Underlying Socioeconomic Vulnerability in Human Populations: Evidence from Variability in Population Health and Implications for Public Health*, 60 J. SOC. SCI. & MED. 2417, 2418 (2005).

tions per tract and included them as a single “underlying capacity” variable in all models.

Finally, to control for neighborhood stability, which is often an indicator of enhanced local social ties, the study used the percentages of residents who had lived in the same location for at least the past five years.⁵⁹

C. Measuring Drug Enforcement

Drug enforcement was operationalized as the number of all juvenile drug arrests per census tract for the years 2005 through 2007. As noted, drug arrests—particularly among juveniles—represent among the most discretionary forms of law enforcement, which typically result not from citizen reports of drug dealing or drug use, but from police department initiatives to engage in street corner arrests. Overall, MPD made 6,462 juvenile drug arrests during the period under study for both misdemeanor and felony charges, and showed great variation across census tracts. Forty-three (23.76%) census tracts experienced no drug arrests during the study, while twenty (11.05%) census tracts experienced just one drug arrest. Fifty-two (28.73%) census tracts experienced between twenty-four and forty-eight drug arrests. Misdemeanor drug arrests typically resulted from possession or usage of an illegal substance (e.g., marijuana, crack, cocaine, or heroin). There were no prescription drug arrests; felony drug arrests typically result from charges of possession with intent to distribute (PWID), i.e., drug dealing.

D. Individual-Level Indicators

In addition to the community-level covariates, the study also included several individual-level factors that may have been associated with prenatal care. These included: mother’s education, representing proxies for health literacy and access to private insurance, which are known covariates of prenatal care;⁶⁰ advanced maternal aged mothers—mothers who were thirty-five years and older at time of delivery—a risk factor for preterm delivery and often associated with prenatal care;⁶¹ and known pregnancy complications/maternal risk indicators, such as gestational diabetes, cardio-

59. Morenoff, *supra* note 6, at 988.

60. David M. Cutler & Adriana Lleras-Muney, *Understanding Differences in Health Behaviors by Education*, 29 J. HEALTH ECON. 1, 3 (2010).

61. Robert L. Goldenberg, *The Management of Preterm Labor*, 100 OBSTETRICS & GYNECOLOGY 1020, 1023 (2002).

vascular disease, hypertension, anemia, genital herpes, previous preterm or low prenatal care delivery, preeclampsia, and low weight gain during pregnancy.⁶² Although pregnancy complications and maternal risk factors may be considered different categories of risk, such events were rare enough in the present data that a single variable representing a count of any maternal risk factors/pregnancy complications performed virtually identically to two separate variables. Table 1 presents the summary statistics for all variables included in the analyses.

Table 1. Summary of all Substantive Variables under Analysis

Variables	Mean	Std. Deviation
Level-2 Factors		
Structural Disadvantage	111.72	61.00
Drug Arrests	6.52	8.56
Percent Latino Population	5.30	6.46
Percent Linguistically Isolated	3.45	4.96
Population Stability	48.99	17.15
Primary Care Centers in Tract	.31	.66
Violent Crime	52.85	51.63
Community Institutions (Parochial Level Informal Social Control)	69.19	80.45
Level-1 Factors		
Mother's Education Level	12.74	3.03
Advanced Maternal Age	9.06	8.56
Pregnancy Complications/Risks	1.33	.47

62. *Id.*; Morenoff, *supra* note 6, at 991; Schempf et al., *supra* note 53, at 104.

E. Analytical Strategies

The study used the MIXED MODEL procedure in SPSS (Version 23) to examine the effects of multilevel covariates on individual-level prenatal care. The MIXED procedure in SPSS is virtually identical to the SAS PROC MIXED procedure⁶³ in that it reliably fits hierarchical models using both fixed and random effects while accounting for clustering.⁶⁴ The data consisted of an initial 22,482 live births, which were subsequently reduced to 22,008 after eliminating plural births (e.g., twins).⁶⁵ The 22,008 birth events (Level-1) were nested within 181 census tracts⁶⁶ (Level-2) over three cross-sectional panels from 2005 through 2007.⁶⁷

IV. FINDINGS

Table 2 shows the parameter estimates and variance components of the full mixed model,⁶⁸ which included both the Level-1 (i.e., individual level) and Level-2 (i.e., tracked level) variables.

63. Judith D. Singer, *Using SAS PROC MIXED to Fit Multilevel Models, Hierarchical Models, and Individual Growth Models*, 24 J. EDUC. & BEHAV. STAT. 323, 324 (1998).

64. James L. Peugh & Craig K. Enders, *Using the SPSS Mixed Procedure to Fit Cross-Sectional and Longitudinal Multilevel Models*, 65 EDUC. & PSYCHOL. MEASUREMENT 717, 738 (2005) (applying SAS PROC MIXED analysis to SPSS MIXED).

65. Research has shown that plural births often restrict fetus growth, lowering infant birthweights more than singleton births, and in ways unaccounted for by environmental factors. See Sue C. Grady, *Racial Disparities in Low Birthweight and the Contribution of Residential Segregation: A Multilevel Analysis*, 63 SOC. SCI. & MED. 12, 3013-29 (2006); Emily Walton, *Residential Segregation and Birthweight Among Racial and Ethnic Minorities in the United States*, 50 J. HEALTH & SOC. BEHAV. 4, 427-42 (2009).

66. At the 2000 census, the District of Columbia contained 188 census tracts. *Census 2000 Tallies of Census Tracts, Block Groups, and Tabulation Blocks*, U.S. CENSUS BUREAU, <https://www.census.gov/geo/maps-data/data/tallies/tabgeo2k.html> (last visited May 10, 2016). This research excluded seven census tracts because they contained zero or nearly zero residential populations. These included tracts in which the federal government maintained a large presence, such as those containing the National Mall, White House, and National Arboretum.

67. The study tested for multicollinearity and spatial autocorrelation in all multivariate models. To assess the former, we ran a series of ordinary least squares ("OLS") regressions, requesting variance inflation factors (VIF) and tolerance scores. All independent variables produced VIFs below 2.50, and tolerances between .400 and .900, suggesting that the predictive factors contained sufficient independent variation for the models to produce reasonably unbiased standard error estimates. See JOHN FOX, *REGRESSION DIAGNOSTICS* (Sage Publ'g, Inc. 1991). To estimate the potential confounding effects of global spatial autocorrelation, as well as spatial clustering, we estimated Moran's I using ArcGIS 10.2 (Esri). Results showed no significant spatial clustering or dependence across census tracts of D.C. We thus estimate a non-spatial model for hypothesis testing.

68. As is customary for mixed modeling (see Peugh & Enders, *supra* note 64, at 721-29), we first estimated an unconditional model that included just the dependent variable and its cross-sectional units (i.e., census tracts) to assess the extent to which the within tract variation was

Table 2. Mixed-Model Results of Adequacy of Prenatal Care (n=22,482 births)

Variables	Estimate	T
Level-2 Factors		
Intercept (Adequacy of Prenatal Care)	2.45	23.08**
Structural Disadvantage	-.901	-5.29**
Drug Arrests	-.801	-4.05**
Violent Crime	-.003	-.834
Population Stability	.012	2.46*
Ethnic Enclave	-.055	-.795
Distance to Closest Primary Care Center (PCC)	-.042	-2.42*
Underlying Capacities (Social Institutions in Tract)	.001	.544
Level-1 Factors		
Advanced Maternal Age Mother	.050	3.44**
Pregnancy Complications/Risk	.027	2.11*
Mother Education Level	.231	8.46**
*p<.05; **p<.001		
Random Effects		
Intercept	.031 (p<.001)	
Level 1 Residual	.839 (p=.015)	

As the data and Table 2 show, half of the theoretical covariates exerted significant influence over the adequacy of prenatal care. Importantly for present purposes, structural disadvantage was strongly associated with adequacy of prenatal care, indicating that for eve-

statistically similar to the between tract variation. The interclass correlation coefficient ($17378/[17378+412417.5]$)=0.04, showed that only 4% of total prenatal care adequacy variability occurred between census tracts. This finding, although significant ($F=227.02$; $p<.001$), indicates that most of the variation in prenatal care occurred within census tracts, somewhat challenging the assumption of ecological homogeneity (i.e., clustering). Nevertheless, model findings indicated the importance of proceeding with the mixed model solution.

ry one standard deviation increase in structural disadvantage, adequacy of prenatal care decreased by .901 standard deviations ($t=-5.29$). In addition, drug arrests also exerted a strong inverse effect on the dependent variable: for every one standard deviation increase in tract-level drug arrests, adequacy of prenatal care decreased by .801 standard deviations (-4.05), lending support to the research hypothesis that drug enforcement in communities can adversely influence the adequacy of prenatal care—an important maternal health behavior.

Note that the relationship between drug enforcement and prenatal care held even while controlling for important structural and individual-level covariates. For example, mothers who were of advanced maternal age ($t=3.44$), the estimated gestational age of the fetus ($t=4.21$), and mothers who lacked a high school diploma ($t=-8.46$) were all significantly related to the adequacy of prenatal care in anticipated directions. In addition, ready access to primary care centers, as indicated by the number of primary care centers protract, was also moderately associated with the adequacy of prenatal care ($t=2.20$). Again, overall, results of this analysis provide reliable support for the research hypothesis that drug arrests across census tracts of the District of Columbia were associated with significant reductions in women seeking and/or initiating prenatal care during pregnancy.

V. DISCUSSION

Liberal consent policing—established in the West by the creation of the London Metropolitan Police Department—places explicit value on the coproduction of safety and access to several types of accountability mechanisms. Scholars in the United States have generally referred to the liberal consent model as “democratic policing.”⁶⁹ At its best, democratic policing is a partnership that strives to increase the life chances of people living in communities.⁷⁰ At its most neutral, democratic policing neither increases nor decreases the life chances of individuals and communities; at its worst, democratic policing reduces the life chances of individuals. Findings from the present study demonstrate what several previous scholars have already identified: Even when fulfilling their social mandate and en-

69. See generally PETER K. MANNING, DEMOCRATIC POLICING IN A CHANGING WORLD 3–37 (2010) (defining democratic police and policing).

70. See De Lint, *supra* note 1, at 55 (arguing how the police beat “structur[ed] police capacity to intervene into the lives of citizens”).

gaging in legal behaviors deemed socially acceptable, some police interventions can violate the ideals of democratic policing to the extent that their strategies make the quality of life worse for local area residents.⁷¹

Simply put, when police tactics are imposed on communities, particularly the most vulnerable communities in which residents have the least access to public accountability mechanisms, the effects can be deleterious for local residents. Does drug enforcement in certain communities reduce the life chances of local residents? Evidence that links the failure to access and/or initiate prenatal care to problematic health outcomes, such as low birth weight and preterm delivery, suggests it might. The question is, why?

A growing body of research strongly suggests that certain features of neighborhood environments can act as local hazards that discourage people from engaging in health promoting behaviors. For example, and as noted, high levels of neighborhood violence can lead to low birth weight and even infant mortality, most likely due to pregnant women not seeking prenatal care.⁷² That is, risky environments often discourage people from using public spaces out of fear of victimization. In addition, perceived provider discrimination might also act as a barrier—analogue to a local hazard—to seeking or otherwise initiating prenatal care because people residing in disadvantaged communities often report feeling judged by healthcare professionals for not adhering to primary care regimens and/or engaging in unhealthy behaviors. If the police become seen as yet another public or social institution that judges residents, treats them with disrespect, and disrupts routine activities with crackdowns and other forms of highly coercive behaviors, then they may also become regarded as an environmental hazard to be avoided; as the community health literature suggests, such avoidance typically

71. ELIJAH ANDERSON, *CODE OF THE STREET: DECENCY, VIOLENCE, AND THE MORAL LIFE OF THE INNER CITY* 320–21 (1999) (detailing community belief that police do not have “community’s best interests at heart”); Kane, *Police Legitimacy*, *supra* note 4 (discussing incidence of police misconduct predicts variations in violent crime in disadvantaged communities); *see also* Charis E. Kubrin & Ronald Weitzer, *Retaliatory Homicide: Concentrated Disadvantage and Neighborhood Culture*, 50 *SOC. PROBS.* 157 (2003) (stating problematic policing is a factor in incidence of “cultural retaliatory homicide”).

72. Ingrid Gould Ellen et al., *Neighborhood Effects on Health: Exploring the Links and Assessing the Evidence*, 23 *J. URB. AFF.* 391, 398–99 (2001) (noting low birth weight and infant mortality); *c.f.* James W. Collins, Jr. & Richard J. David, *The Differential Effect of Traditional Risk Factors on Infant Birthweight Among Blacks and Whites in Chicago*, 80(6) *AM. J. OF PUB. HEALTH* 679 (1990) (discussing birth weight); Kane, *Unhealthy Places*, *supra* note 6 (birth weight); Morenoff, *supra* note 6 (examining birth weight); Schempf et al., *supra* note 53.

means failing to engage in health promoting behaviors outside the home.⁷³

But it doesn't have to be this way. Unlike several other social institutions, such as fire departments and emergency departments, police departments serve people across a myriad of demands. Although police officers frequently see people during exigent circumstances, more often than not, they interact with people not in distress during routine calls for service.⁷⁴ Indeed, the literature on police workload indicates that approximately thirty to thirty-five percent of all police calls for service are crime related.⁷⁵ The remainder—i.e., the majority—of their contacts with the public during calls for service are for non-crime related events.⁷⁶ It is during these non-exigent interactions that police can have the greatest positive impact on health promoting behaviors. It is possible, for example, that with minimal training and assessment instruments developed for quick field deployments, police officers could conduct general health and safety assessments during routine calls for service. They might also be able to assess older adults' risks for falls inside their homes. They could write their reports (of which there are many during a routine shift) in public parks to discourage disorderly behaviors and encourage the public use of green spaces. That is, as a social institution that resides at the crossroads of health, justice, and crime, the police are almost uniquely suited to help facilitate health promoting behaviors, which ultimately might lead to increased life chances for people residing in vulnerable communities. But this will not happen until the current model of policing by imposition gives way to an honest system of democratic policing.

Police officers already act as healthcare professionals when they are called to deliver a baby, or respond to calls related to domestic violence, sexual assaults, or persons who pose a danger to themselves or others. The Crisis Intervention Team Model (CIT), where officers receive forty hours of specialized training in response to persons with mental illness or emotional distress, is a worthwhile

73. See Galea, Ahern & Karpati, *supra* note 58, at 2418; Cutler & Lleras-Muney, *supra* note 60, at 3.

74. Robert J. Kane, *Policing in Public Housing Using Calls for Service to Examine Incident-Based Workload in the Philadelphia Housing Authority*, 21 *POLICING* 4, 618-31 (1998) [hereinafter Kane, *Public Housing*].

75. *Id.*; Jack R. Green & Carl B. Klockars, *What Police Do*, in *THINKING ABOUT POLICE: CONTEMPORARY READINGS* (Carl B. Klockars & Stephen D. Mastrofski eds., 2d ed. 1983).

76. Donald Black, *The Social Organization of Arrest: Citizen Discretion*, in *THINKING ABOUT POLICE: CONTEMPORARY READINGS* 268, 268-70 (Carl B. Klockars ed., 1983); Kane, *Public Housing*, *supra* note 74, at 618.

example of how police officers can effectively collaborate with healthcare professionals to increase a population's access to mental health services.⁷⁷ The CIT is a good start, but just as with most officers' calls for "health-related events," the model represents a downstream intervention, i.e. when a person's health is in crisis.

Similar then to the CIT model, officers could volunteer for specialized training and develop partnerships with public health nurses to identify women and neighborhood residents in need of care before they are in a health crisis. If we are to effectively move our healthcare delivery system upstream, then we will need to develop interventions that include the police, who are often the first to interact with our most vulnerable citizens. The police might then become community facilitators rather than barriers to women seeking prenatal care.

77. Amy C. Watson & Anjali J. Fulambarker, *The Crisis Intervention Team Model of Police Response to Mental Health Crises: A Primer for Mental Health Practitioners*, 8 BEST PRACS. MENTAL HEALTH 71, 73-75 (2012).