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The Institute for Research on Poverty
University of Wisconsin
Madison, WI
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Myself

• Immigrant from Mexico (same time I became a permanent resident, I got into Graduate School)
• PhD in Economics from The New School for Social Research (same day I got a full time academic job)
• Promoted to Associate Professor after 3.5 years in my position
• I work in the 3rd largest university in terms of size (CUNY)
• Campus located in The Bronx (minority groups are in great supply)
What am I doing?

• My prior research relates to the HIV infection in developing and industrial countries
• This problem raises the issues of the impact of the HIV/AIDS epidemic on economic growth through its feedback effects
• I approached this specific endogeneity by means of a cross-country, statistical methodology and discovered that instrumental variables as well as panel data may discern at least these two lines of influence
What am I doing?

• I am currently exploring the socio-economic determinants of health influencing HIV infection rates among young Black and Hispanic males in New York City

• This work aims to analyze the dynamics of a public health problem affecting a vulnerable population as well as to build a feasible explanation of the negative health outcomes experienced by minority young males
What am I doing?

• The overlap of health economics and public health will help me assess culturally tailored health interventions for people living with HIV

• AIDS-related health inequalities have increased lately, being the Black and Hispanic groups disproportionately affected

• My work transits towards the use of micro-data and community-based research, where the inclusion of behavioral factors becomes a fundamental piece of the explanation
Context of my research

• Interplay of incarceration and HIV rates among Blacks and Hispanics living in NYC
• My research states that, while many older adults are HIV-positive and longtime survivors, others are becoming newly infected at very fast rates, which has resulted in a new cohort of young and adolescent individuals (generational gap)
• Among this vulnerable population, MSM and women are at higher risk of contracting the HIV infection
How am I doing it?

• Building partnerships with colleagues from different disciplines (public health, sociology, anthropology)
• Building collaboration with Departments of Economics and Schools of Public Health at CUNY and other with other institutions
• Seeking guidance and mentorship opportunities with well-established scholars
• Seeking (desperately) external funding
The Effects of Incarceration on HIV and its Influence on Health-Related Disparities in NYC

Juan J. DelaCruz, Lehman College and Graduate Center – CUNY
Nikolaos Papanikolaou, New School for Social Research
Rongning Wu, Baruch College – CUNY
Introduction

• As in any major US metropolitan statistical area, NYC is the center of the HIV epidemic, where there is a great concentration of different pathologies and is demographically diverse

• This paper aims to analyze the HIV epidemic in terms of its racial/ethnic composition and its association with the criminal justice system among Blacks and Hispanics
Literature Review

• Modeling the HIV epidemic is a challenging task because health status is multidimensional and its determinants are yet to be explained in greater detail (Almond, 2006)

• In the magnitude and natural history of disease, there is an inherent difficulty of detecting delayed effects on health (from infection with HIV to full-blown AIDS)
Literature Review

• The Augmented Solow Model (including human capital as a determinant) provides the macro-economic construction explaining the economic impact of HIV (McDonald and Roberts, 2006)

• At the macroeconomic level, there are different avenues explaining the interplay of HIV/AIDS and real income per capita across countries (DelaCruz, 2010)
Literature Review

• Association between imprisonment and AIDS rates, emphasizing the black-white AIDS rate disparity (Johnson and Raphael, 2009)

• Role of social context in heterosexual networks facilitating the spread of HIV and other STI’s (Adimora, 2001, 2006)

• Effect of high incarceration rates on STI’s and teenage pregnancies in the south (Thomas and Torrone, 2006)
Literature Review

• The literature is heavily populated with studies using cross-sectional, primary data analysis and mixed methods

• In general, community based research (CBR) has recognized that re-entering communities after imprisonment is a puzzling mission for the former incarcerated

• Former inmates may return to behaviors leading to re-incarceration
Methods and Data

• Our aim is to examine the correlation between the spread of HIV and levels of incarceration between Blacks, Hispanics and Whites using a panel regression

• Data over the past decade was compiled (2002-2009 only)

• A possible shortcoming of our work is the shortness and irregularity of time series at the state and local levels
Methods and Data

Empirical Model: $Y_{it} = \beta X_{it} + \alpha_i + u_{it} + \varepsilon_{it}$

- $Y_{it} = \log (\text{HIV diagnoses in NYC/NYS})$
- $\beta$'s = estimates
- $X_{it} = \text{matrix of HIV/AIDS factors}$
- $\alpha = \text{unknown intercept}$
- $u_{it}$'s = error across race
- $\varepsilon$'s = error within whites, Hispanics and Blacks
- A random effects panel regression is utilized
Methods and Data

• The model assumes that race is not correlated with incarceration. This allows the time-invariant variable (race) to provide useful information to better explain the outcome variable (HIV diagnoses)

• Two separate panel regressions were run, one for NYC and other for NYS. Then the results were compared
Stylized Facts

• The CDC reported that new AIDS diagnoses in 2007 were concentrated as follows: 25% Northeast, 11% Midwest, 46% South and 17% West.

• In all these regions Blacks and Hispanics represented the majority of the cases

• At the national level and in NYS, HIV incidence has been significantly higher across minorities than among Whites. NYC has the highest number of reported AIDS cases
Stylized Facts

• HIV prevalence among MSM in NYC similar to South Africa's general population. Prevalence for Black men in Washington, DC and for all Blacks in Newark, NJ compares to countries such as Kenya and Rwanda.
AIDS Diagnoses NYS - NYC

SOURCE: New York State Department of Health, Bureau of HIV/AIDS Epidemiology, New York State
AIDS Diagnoses NYC-Rest of the State

SOURCE: New York State Department of Health, Bureau of HIV/AIDS Epidemiology, New York State
Stylized Facts

• There is a heavy burden of disease as per the number of new HIV diagnoses in NYC but the case rate is lower relative to other MSA’s

• In NYC, the South Bronx, Central Brooklyn, Chelsea-Clinton and Harlem are the vicinities with the highest proportions of PLWHA and the highest community viral load

• These neighborhoods are heavily populated by distinctive populations such as Blacks, Hispanics and MSM
## Demographic Characteristics by Race/Ethnicity and Inmates Under Custody in NYS

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<th>Race/Ethnicity</th>
<th>Inmates</th>
<th>Share</th>
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Incarceration Rates by Race/Ethnicity

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<tr>
<td>Hispanics</td>
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<td>Whites</td>
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98.1      98.4
HIV across Race/Ethnicity: Panel Data
Incarceration across Race/Ethnicity: Panel Data
## HIV and Incarceration in NYC: Regression

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<th>Areg_NYC</th>
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Legend: * p<0.05; ** p<0.01; *** p<0.001
HIV and Incarceration in NYS: Regression

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</table>

Legend: * p<0.05; ** p<0.01; *** p<0.001
Findings

• We take racial/ethnic disparity as given and began from the point of incarceration (NYC or NYS)
• We argue that race is a relevant factor when analyzing incarceration but inconclusive as far as the spread of HIV within prisons (race was statistically insignificant)
• Therefore, underlying factors increase HIV among the prison population and impacts minority communities at large
Findings

• There is a gap in the level of HIV and location of incarceration between the state and city levels: a 1% increase in incarceration for NYC results in a 0.42 % increase in new HIV diagnosis, while a 1% increase in incarceration coincides with an increase HIV by 0.72 % in NYS

• The variability due to differences among the racial groups across panels is 60 % for NYC and 57 % for NYS
Findings

• The entity (race) is uncorrelated with the predictor variable (incarceration)

• It supports the argument that the availability of health and allied services may provide a more vital response in fighting the epidemic in NYC than at the state level.

• Due to successful implemented strategies, the NYC Department of Health has recently reported a significant reduction in sero-conversion among the general population.
Policy Implications

• Harm-reduction and condom use programs have proven to be effective in preventing new HIV infection in the short run in the general population

• In the same fashion, behavior change interventions have also been instrumental in lowering the number of HIV infections within MSA
Policy Implications

• Early interventions within the prison system to avoid unsafe sexual practices and injecting-drug use would help to close the racial/ethnic disparities of the HIV epidemic

• Mandatory testing, medical treatment and educational programs are necessary conditions to overcome the HIV crisis within the criminal justice system
Final Comments

• HIV-related gaps still persist in NYC/NYS, affecting disproportionately health status of Blacks and Hispanics, particularly those dealing with the criminal justice system.

• These inequities have distressed those living outside of NYC in greater extent, where more culturally tailored programs may be absent.

• A Hispanic or Black may find more difficult access to health care in a MSA or outside this MSA.
Final Comments

• Disproportionate HIV incidence among minority groups suggests that prevention efforts are not enough to stop the epidemic
• It has rather increased health-disparities with a burden for minority groups
• More evidence-based (best-practices) and/or cost-effective health strategies oriented to the underserved have to be further implemented
What’s next for Juan?

• I am applying for a change of career award before the office of AIDS Research Training, HIV/AIDS Health Disparities at the National Institutes of Health (NIH)
• This new endeavor will allow me to enhance my skills as a health economist while learning new methodologies that are relevant in the field of public health.
• These new techniques are community-based research and mixed methods (qualitative/quantitative approaches)
What’s next for Juan?

• I want to utilize available resources to gain a better understanding of the application of statistics to a wider range of issues related to biology.

• This new set of skills will help enhance collaboration with other economics department with strong orientation to multidisciplinary research, as well as with schools of public health and institutions having a tradition of translational research.