Is Previous Removal from the United States a Marker for High Recidivism Risk? Results from a Nine-Year Follow-Up Study of Criminally-Involved Unauthorized Immigrants

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Abstract

The present study examines the long term recidivism patterns of a group of unauthorized immigrants identified to be at high risk of recidivism. Using a sample of 517 male unauthorized immigrants, we used three measures of recidivism to assess nine-year rearrest differences between unauthorized immigrants who have and who have not been previously removed from the United States. Results indicate that prior removal was a significant risk marker for recidivism, with previously removed immigrants showing a higher likelihood of rearrest, a greater frequency of rearrest, and a more rapid time to first rearrest. While the present study does not establish whether previous removal is a consistent indicator of high recidivism, it suggests that this group of unauthorized immigrants may be worthy of review and policy consideration. Much potential value for law enforcement lies in the sharing of federal immigration records with academics to further study the outcomes of unauthorized immigrants.

Keywords: immigration, recidivism, illegal immigrants, jail populations, propensity scores

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Particularly since the terrorist attacks of September 11, 2001, the enforcement of civil immigration law within the interior of the United States has been an increasing focus of attention and controversy (Saunders, Lim, & Prosnitz, 2010). Estimates suggest that this population has grown to 11 million, up from an estimated 8 million in 2000 (Passel & Cohen, 2012). What to do about this population has been the subject of considerable controversy. There is, however, comparably less rancor over potential enforcement responses to unauthorized immigrants who are identified within a criminal justice population. Perhaps as a result, this particular subgroup (i.e., criminally-involved unauthorized immigrants) has been an increasing focus of federal immigration enforcement efforts over the past decade (GAO, 2012). Within this subgroup, a high priority has been placed on identifying and removing those who have previously been removed from the country (Morton, 2012).[1]

Central to this focus is the expectation that criminally-involved unauthorized immigrants with a record of previous removal pose a high relative risk to public safety. To date, however, almost no empirical information has been available to test this expectation. We could identify only a single study (Hickman & Suttorp, 2010) on the topic. This work found a substantial difference in rearrest patterns, in a direction of greater recidivism risk for those with a record of previous removal relative to those without. This study, however, is limited by a relatively short one-year follow-up period. Previous research with other criminal justice populations suggests

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[1] Due to an evolution in language over the past decade, the terms "deportation" and "deportable" have been largely replaced in federal immigration enforcement. The terms "removal" and "removable" are now the preferred terms for the removal of noncitizens from the United States and a noncitizen subject to being removed, respectively. Thus, we use the latter terms here. While federal immigration authorities typically use the term "removable alien," we use the term "unauthorized immigrant" here to refer to noncitizens amenable to removal. We use the term "previously removed" to refer to unauthorized noncitizens who have a federal immigration record of being previously deported/otherwise removed or who are under orders to be removed from the United States.

that short-term differences in recidivism do not necessarily predict long-term differences (e.g., Huebner, 2009; Johnson, 2004; Maltz, 1984; Ostermann, 2013; Worrall, 2008). The purpose of the current study is examine whether the considerable differences in rearrest detected over a short period in the Hickman and Suttorp study persist over a substantially longer follow-up period. While rearrest measures cannot be used as an indicator of underlying criminal propensity (Elliott, 1995), empirical analyses based on these data can contribute useful information for informing federal and state/local policy choices around unauthorized immigrants. In particular, analyses of the relationship between previous removal and recidivism can assist federal policymakers in evaluating unauthorized immigrant detention and removal priorities. Moreover, the availability of empirical data about rearrest may also help local jurisdictions in weighing the complex policy choices surrounding the extent and form of their active cooperation with federal authorities in immigration enforcement.

Interior Immigration Law Enforcement

Historically, interior immigration enforcement (i.e., enforcement in areas not immediately adjacent to the U.S. border) has been the purview of the federal government, with local law enforcement agencies largely unconnected to such efforts (Vogel, McDonald, Jordan, Duvell, Kovacheva, & Vollmer, 2009). In recent years, however, the involvement of local law enforcement expanded dramatically with the passage of the Illegal Immigration Reform and Immigration Responsibility Act of 1996. This federal legislation included Section 287(g) which allowed the federal government to essentially "deputize" members of state and local law enforcement agencies to perform certain enforcement roles previously reserved for federal authorities. These include designating specially trained officers to substitute for federal immigration authorities within local jails to identify and seek legal detainers for unauthorized

immigrants. The first Section 287(g) agreement was formed in 2002 and by 2009 there were 833

so-called 287(g) local law enforcement officers in 23 states (Office of Inspector General, 2010).

Section 287(g) also enabled state and local law enforcement participation in targeted

immigration enforcement task force activities, contingent upon the development of formal

agreements detailing mutual responsibilities and training requirements.

Secure Communities

In 2008, the federal government also launched "Secure Communities." This is an effort

intended to increase the identification and removal of criminally-involved immigrants by tapping

in to the standard practices of state and local law enforcement. Under Secure Communities, when

state and local law enforcement agencies send digitized fingerprint and arrestee information to

the Federal Bureau of Investigation (FBI), the standard records check query is also routed

through a separate immigration records check. The initiating law enforcement agency then

receives two types of information: (1) the standard criminal records information (including

"wants and warrants") and (2) information about whether the individual is an unauthorized

immigrant eligible for removal. In the latter case, an alert is also sent to the corresponding U.S.

Immigration and Customs Enforcement (ICE) field office. The ICE field office may then request

that the law enforcement agency detain the individual for transfer into federal immigration

custody for potential detention and removal from the United States (GAO, 2012).

According to a report released by ICE, as of January 22, 2013, Secure Communities has

been "activated" in 100 percent of U.S. local jurisdictions, accounting for 3,181 jurisdictions in

all 50 states, the District of Columbia, and all U.S. territories (ICE, 2013a). Between its launch in

late October 2008 and 2012, ICE reports that approximately 5 percent of over 28 million Secure

Communities searches resulted in a match with an individual in federal immigration records. The

process ultimately led to the removal of 227,590 unauthorized immigrants during this time period (ICE, 2013b).

Unlike Section 287(g) collaborations between local and federal agencies, Secure Communities has been characterized as an information-sharing program between federal agencies (i.e., FBI and Department of Homeland Security) and, therefore, immigration records checks do not require the active consent of the local agencies submitting arrestee fingerprints (ICE, 2012). While Secure Communities has been welcomed in some jurisdictions, in others it has been implemented over the objections of local and state elected officials and vocal public protest (Jordon, 2011).

With all local U.S. jurisdictions now participating directly and indirectly in interior civil immigration enforcement, a number of issues and challenges have arisen in the process. Among them are concerns about collateral consequences for policing in local communities. These include worsening relations between immigrant communities and law enforcement, leading to suppression of overall crime reporting, reduced cooperation with law enforcement investigations, and thwarting of community policing efforts (Davis, Erez & Avitabile, 2001; Decker, Lewis, Provine, & Varsanyi, 2009; Khashu, 2009; Vogel et al., 2009). In addition, a number of community protests have arisen around the assertion that Secure Communities is merely sweeping up large numbers of low-risk immigrants for minor offenses. Opposition groups often highlight examples of individuals transferred to ICE custody after arrests for public intoxication, unlicensed street ice cream sales, and unpaid parking tickets (Harmon, 2012; Taxin, 2011).

The U.S. Department of Homeland Security, in turn, has sought to clarify that its interior civil enforcement efforts are focused on individuals who pose a noteworthy risk to the community, not on individuals arrested for minor offenses or with a limited criminal history

(Office of Inspector General, 2010). In its most recent clarification across all its interior enforcement programs, ICE Director John Morton issued guidance directing agents to target individuals "whose removal promotes public safety, national security, border security, and the integrity of the immigration system" (Morton, 2012).

Previously Removed Unauthorized Immigrants

Among the characteristics identified as top ICE interior enforcement priorities are unauthorized immigrants with a prior record of (or outstanding order of) removal. This group has long been singled out in political and policy discussions as posing a particularly high crime risk, potentially cycling back and forth across the U.S. border engaged in criminal pursuits (CCJCC, 1997; Raymond, Hickman, & Williams, 2004; Warner, 2005). Through fiscal year 2012, ICE reports that Secure Communities has led to the apprehension and removal of 42,596 unauthorized immigrants who had either been previously removed or had previously evaded final orders of removal/deportation. This represents approximately 19 percent of all removals of individuals identified through Secure Communities (ICE, 2013b).

Despite the priority placed on identifying and removing this group, there has been almost no empirical assessment of the relative criminal recidivism risk posed by previously removed unauthorized immigrants (Saunders, Lim, & Prosnitz, 2010). This is a particularly relevant issue at a time when ICE detention resources are increasingly limited and must be strategically utilized for those who pose the greatest risk (Morton, 2012). Moreover, local governments in some jurisdictions are under growing pressure to refuse immigrant detainer requests through Secure Communities or have already declared their intention to refuse them for individuals arrested for minor offenses (Rubin & Blankstein, 2012).

While we could identify no theoretical perspective that contemplates previously removed immigrants, there is reason to suspect that unauthorized immigrants with a record of prior removal may pose a higher risk of criminal recidivism. Given that prior criminal behavior and failure to comply with federal law can *cause* a removal, a record of prior removal may simply serve as an indicator of a prior official criminal record. The latter is a very well-established recidivism risk factor (e.g., Cullen & Gendreau, 2000; Latessa, Listwan, & Koetzle 2013; MacKenzie, 1997). Empirically, though, this expectation remains untested. In our search of the empirical literature, we could find a rapidly growing macro-level literature examining immigrant population concentrations and crime (e.g., Ousey & Kubrin, 2009; Wadsworth, 2010), and many fewer individual level studies (e.g., Katz, Fox, & White, 2010; Powell, Perreira, & Harris, 2010). We could identify only study containing data distinguishing unauthorized immigrants at the individual level. This study found that "legal" immigrants identified in a criminal justice population did not differ from unauthorized immigrants on the likelihood, frequency, or timing of rearrest one year post-jail release (Hickman & Suttorp, 2008). Likewise, we could identify only one study distinguishing previously removed immigrants (Hickman & Suttorp, 2010). While there are a few examples of reports released by federal agencies that provide some descriptive information on the previously removed, none contain a comparison group or report more than simple counts or percentages with a rearrest or conviction.

In the next section, we discuss the sole existing study on previously removed unauthorized immigrants in some length in order to set the context for the present study.

Los Angeles County Jail Foreign Born Inmates Study

Hickman and Suttorp's study of previously removed unauthorized immigrants employed data from the Los Angeles County Jail Foreign Born Inmates study (Hickman, Suttorp, & Wong,

2005). The latter study focused on male foreign-born jail inmates released between August 4 and September 2, 2002. Over this 30-day period, there were a total of 2,892 foreign born inmates released from the jail. Within this group, 1,617 (56%) individuals were determined to be unauthorized immigrants. Of this latter group, 517 (32%) were released physically from the jail into the community (as opposed to a release directly into the custody of ICE or another agency).[2] Of those, 27 percent had a federal immigration record of at least one prior removal/deportation from the United States. Using these data, Hickman and Suttorp (2010) compared the one-year rearrest patterns of the community-released unauthorized immigrants with a record of previous removal (n=139) to the rearrest patterns of those without such an arrest (n=378).

Defining recidivism as a record of rearrest at any point within 365 days of each individual's date of jail release, Hickman and Suttorp found a sizeable and significant difference in recidivism between these two groups. Specifically, 73 percent of those with a record of previous removal were rearrested within one year, relative to 32 percent of those without. The former group was also arrested more frequently, with 28 percent arrested three or more times relative to 7 percent, respectively. These large differences in the simple bivariate comparisons also emerged in multivariate statistical models examining the likelihood, frequency, and timing of rearrest. The two groups began to diverge around 35 days post-jail release, with a record of prior removal associated with more rapid rearrest.

Present Study

Previous studies of recidivism within other types of offender populations have found that short-term differences do not necessarily persist over the longer term (e.g., Johnson, 2004; Maltz,

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[2] The policy of the LA County Sheriff's Office at the time was to cooperate with all ICE detainers and transfer all removable inmates into the custody of ICE. Unauthorized immigrants were nonetheless released from custody for various reasons related to the expiration of legal authority to locally detain the inmate. Typically, it occurred because ICE agents were unavailable to take custody of an inmate otherwise set for release or delayed determination of immigrant removal status by the Law Enforcement Support Center (LESC) (Hickman et al., 2005).

1984; Ostermann, 2013; Worrall, 2008). The goal of the present study is to assess whether the rearrest differences observed in the Hickman and Suttorp (2010) study persist after a substantially longer follow-up period. The present study utilizes the same baseline data as Hickman and Suttorp (2010) but adds updated arrest records for all 517 individuals covering nine years post jail release (2002 – 2011). In the next section, we discuss the identification of unauthorized immigrants in the original data and the subsample used in the current study, followed by a description of the independent and dependent variables used in the analysis. Lastly, we discuss the analytic approach.

Description of Data and Variables

The Los Angeles County Jail Foreign Born Inmates study (Hickman et al., 2005) collected data generated through the standard jail booking procedures for foreign-born inmates. Each arrestee was routinely asked to self-report their place of birth and submitted to digital fingerprinting using Livescan equipment. Those indicating foreign birth or for whom an existing criminal justice record indicated foreign birth were flagged for immigration status determination. (The United States possesses no national database of native-born citizens. There is therefore no practical research method of confirming the native citizenship of the large group of individuals who claim it.) Digital fingerprints were also routinely searched against local, state, and federal databases to reduce the risk of false identification (Raymond et al., 2004).

Immigration status for all foreign-born inmates was determined via direct screening in the Los Angeles County Jail by ICE agents and via immigration records checks for each foreign-born individual conducted by the U.S. Immigration and Customs Enforcement's Law Enforcement Support Center (LESC).[3] For purposes of the original data collection, ICE agents

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[3] While the data collection effort predated Secure Communities, the LESC process used in the study protocol was very similar but was performed only for those identified as foreign-born.

entered an immigration detainer record for all foreign-born inmates they determined to be

unauthorized (via in-person interviews and record checks). When ICE agents were unavailable to

interview foreign born inmates directly (largely due to time constraints), electronic queries were

sent by jail staff to the LESC. In response, LESC staff provided electronic replies containing

information about the presence or absence of an immigration status record for each individual. If

an immigration record could be found in one of multiple federal immigration database checks,

LESC provided information about the individual's current legal status and whether the individual

had been removed (or had evaded prior final orders to leave the country) prior to the 2002 jail

stay.

Unauthorized immigration status was coded for the Los Angeles County study using (1)

these electronic responses from the LESC or (2) the presence of an unauthorized immigration

detainer entered by an ICE agent located within the jail (Hickman et al., 2005). In the data,

unauthorized status is indicated as a single variable representing both individuals who had

originally entered the country illegally and those whose legal permission to be in the country had

either expired or had been revoked.

Previous removal status was coded for the original study based upon LESC electronic

responses indicating the presence of such a record (=1). In six cases, the presence of previous

removal status was coded (=1) based on a record in Los Angeles County's own fingerprint-based

criminal records system. The latter contains a flag indicating previous removal for a small

number of unauthorized immigrants. This flag was the result of a temporary immigration record-

sharing partnership between immigration authorities and LA County for purposes of to

increasing identification of this group (see Raymond et al., 2004 for a full discussion of this

arrangement). In sum, for all unauthorized immigrants, the data also contained an indicator

capturing whether the individual had been previously removed or had evaded final orders of removal (=1) or no such record could be found (=0).

Given the present focus, additional discussion of the potential limitations of the sample is in order. It is reasonable to expect high motivation on the part of unauthorized immigrants to provide false identification information to avoid detection. This identification problem is not unique to the study of immigrant populations. Recidivism research of all sorts that relies on official records suffers from this problem to varying degrees, with an expected bias in the direction of failing to identify those with more extensive criminal histories. Fortunately for the present study, LA County had developed an integrated electronic fingerprint-based criminal justice records system, making positive identification more likely at the time of 2002 jail booking (Applegate & Chotiner, 1999).[4] Digitized fingerprints are matched against not only local arrestee and court records (e.g., arrest, conviction, and sentencing information) but also those maintained at the state (maintained by California Department of Justice) and national level (maintained by the FBI's National Crime Information Center) (Raymond et al., 2004). The process improves the accuracy of existing records and reduces the likelihood that individuals can conceal their identities by providing false names (Applegate & Chotiner, 1999). This is only the case, however, for those with an existing record. LESC immigration records checks were made using the individual identifiers provided by LA County, after positive identification.

Of course, it is still likely that some unauthorized immigrants in the sample avoided identification, particularly among those individuals with no prior criminal justice contact. This raises questions about the extent to which undetected unauthorized immigrants differ from those

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[4] Indeed, the widespread problem of matching records to arrestees who provide false identification is well-known in criminal justice agencies. LA County's integrated fingerprint-based system was developed following a well-publicized failure to identify wanted serial murder suspect Richard Ramirez, the notorious "Night Stalker." Ramirez was in custody on an unrelated charge but released after providing false identification (Applegate & Chotiner, 1999).

positively identified in the current sample. Among the 1,698 foreign-born inmates released into the community, LESC could identify no matching immigration record for 24 percent. Since the absence of such a match was not accepted by ICE as adequate evidence of unauthorized status, these unmatched inmates were coded as immigration status missing (Hickman et al., 2005). While this likely means the data underestimate the number of unauthorized immigrants, it avoids a larger alternative problem of clouding the interpretation of results by "guessing" at immigration status. Like the Hickman and Suttorp (2010) analysis, those missing immigration status were excluded from the present sample. An analysis (using t-tests and chi-square tests) showed that these excluded cases did not differ significantly on available demographic characteristics, criminal history, or recidivism patterns.

Control variables

In addition to immigration status (and previous removal status), the baseline data contained inmate criminal history records, limited demographic information, and data on the circumstances and characteristics of the 2002 jail stay. The current study employed the same control variables as the Hickman and Suttorp (2010) study. That study selected variables based on what could be obtained from available official records in addition to their relevance in prior recidivism research, particularly a prior study of individuals released from the LA County Jail (Petersilia, Turner, & Fain, 2000).

Demographic characteristics were drawn from the jail's management information system and included age at the time of 2002 jail release and country of birth. The majority of the sample (62%) self-reported Mexico as their place of birth, with a mix of Central American countries representing the next most commonly-reported location (27 percent). Given this distribution, nationality is captured with a dichotomous variable indicating Mexico (=1) versus any other

country (=0). Given the lack of variation in the sample, race and ethnicity information were not included as control variables.

In the present context, controlling for criminal history is important because of the expectation that the existence of an official criminal record could represent a systematic difference between the two groups of interest (i.e., unauthorized immigrants with and without a record of previous removal). For this purpose, relevant criminal history variables refer to the period prior to the 2002 jail stay. Two variables capture criminal history: (1) a frequency variable indicating the number of prior arrests and (2) a dichotomous variable indicating at least one prior conviction for either a misdemeanor or felony offense (=1). Criminal history data were obtained from LA County's Consolidated Criminal History Reporting System (CCHRS; based on fingerprints), statewide criminal records from the California Department of Justice, and national criminal history information from the FBI's National Crime Information Center. These local, state, and national criminal history data were consistently available for a six-year period prior to the study's data collection in 2002.

The circumstances of the 2002 jail stay were captured in a series of variables obtained from the jail's management information system. Several variables captured variation in type and severity of offenses associated with the 2002 jail stay (each stay could be associated with one or multiple offenses). For capturing severity of offense, a dichotomous variable was used indicating whether the most serious charge associated with the jail stay was a felony (=1) versus a misdemeanor or violation (=0). Because individuals can be incarcerated for multiple offenses, the data contained four dichotomous variables capturing whether any one of the charges included at least one person offense (=1), at least one property offense (=1), at least one drug offense (=1),

or at least one other type of offense (=1). The latter category includes vehicle/driving related offenses, weapons charges, parole/probation violations and the like.

A frequency variable captured the number of days spent in the LA County jail prior to release (i.e., number of days of incarceration) and another dichotomous indicator assessed whether the individual was released post-conviction (=0) or was not convicted at the time of release (=1). The latter group includes those released from the jail due to trial acquittal, dropped charges, and bond/citation. The presence of high multicollinearity among the control variables was tested for and ruled out using variance inflation factors (VIF) diagnostics.

Recidivism Measures

For the current study, the nine-year recidivism variables consist of three measures. Likelihood of rearrest (=1) is an indicator capturing whether criminal arrest records show at least one arrest within nine years (3,285 days) of the 2002 jail release date. A frequency variable captures the number of discrete arrest incidents recorded over the nine-year period. In other words, an arrest incident can include multiple charges but is counted as only one arrest. Finally, time to rearrest captured the number of days from the day of the 2002 jail release until first rearrest, with a possible range of 1 to 3,285 days for each individual. Table 1 shows a summary of the study characteristics and data sources.

Table 1. Summary of Study Characteristics and Data Sources

Fielding period	August 4, 2002—September 2, 2002
Inmate release categories	Released pretrial on citation or bond, case dismissed or acquitted, or post-conviction release after sentence completion
Data used to code unauthorized status	a) Jail records of immigration screenings and/or detainers b) Law Enforcement Support Center narrative response to law enforcement query for immigration status
Data used to code previous removal	Law Enforcement Support Center narrative response to law enforcement query for immigration status
Control variables from official jail records	Demographics, criminal history, current charges, reason for release, and length of stay associated with incarceration during the fielding period
Recidivism data	Criminal records provided by the California Department of Justice through 2011

Statistical Methodology

We used three methods to analyze differences in nine-year recidivism between the two groups of unauthorized immigrants. First, we examined *likelihood of rearrest* by using a logistic regression model to assess whether previous removal was predictive of any rearrest. Logistic regression measures the relationship between a dichotomous event (i.e., rearrested versus not rearrested) and a set of independent variables (Hosmer & Lemeshow, 1999). Secondly, we employed survival analysis to compare previously removed and never removed immigrants on the *timing of rearrest*. We estimated time to rearrest using a Cox proportional hazards model with right censoring (again, because not all were rearrested by the end of the follow-up period).

Finally, we examined *frequency of rearrest* using negative binomial regression to model the relationship between previous removal and the number of rearrests incurred during the follow-up period. In this context, a negative binomial model is the more appropriate count regression approach (relative to a Poisson model) because it adjusts for overdispersion, which relaxes the assumption that the mean and the variance of the number of rearrests are equal (Long,

1997), and accommodates count data with several zero values (i.e., those who were not rearrested during the follow-up period).

A sensitivity analysis was performed to test for the potential influence of extreme outliers in the negative binomial analysis. Extreme outliers were defined as individuals with a frequency of rearrest that exceeded the boxplot "inner fence" (calculated as quartile 3 + 1.5*interquartile range; e.g., see Dawson, 2011). Using this method, we identified 17 extreme outliers (3 percent of the sample), each with 13 or more rearrests in the nine-year follow-up period. Seven of these were among the previously removed and the remaining 10 had no record of prior removal. The sensitivity analysis results indicated the influence of extreme outliers on three control variables but not on the key variable of interest (i.e., previous removal status). Unfortunately, there is no consistent standard in the literature for dealing with extreme outliers under these circumstances (e.g., see Orr & Sackett, 1991). Analysts are generally advised to consider the interpretation of results. Given this, we elected to drop the 17 extreme outliers from the negative binomial analysis reported here (though we will return to them in later analyses). This choice does not impact the findings on previous removal and avoids undue attention to control variables that are disproportionately influenced by less than three percent of the sample. There may be something unique about the 17 extreme outliers producing such a high rate of rearrest. Unfortunately, they are too few and our data are too limited to provide insight on this issue.

As prior removal status is not randomly assigned, there is a likelihood that the groups differ substantially on background characteristics in ways that could impact results. Controlling for potentially relevant differences increases confidence in results but comparisons can be improved in this context through the use of propensity score weighting in multivariate models.

Propensity score weighting is a method to adjust for confounding variables that are correlated with both the key predictor variable (prior removal status) and the outcome of interest (arrest) (McCaffrey, Ridgeway, & Morral, 2004; Ridgeway, 2006; Rosenbaum, 1987). Weighting by propensity scores provides a more robust comparison than does a standard regression approach for estimating the average recidivism outcome for a previously removed immigrant who is situated similarly (with respected to observed control variables) to the remaining unauthorized immigrants released from the jail (McCaffrey et al., 2004; Wong & Schonlau, 2013).

To calculate the propensity weights, using the unweighted baseline covariates shown in Table 3 we estimated a logistic regression model that predicts whether an unauthorized immigrant was previously removed. All previously removed immigrants received a weight of 1, while never removed immigrants received a weight equal to the predicted value from the logistic regression divided by 1 minus the predicted value (p/1-p) (Rosenbaum & Rubin, 1984). Table 3 shows that the application of the propensity score weights effectively balances the two groups for each covariate (i.e., after weighting the two groups do not differ significantly on any of the baseline covariates). In all of the propensity score-weighted models, we incorporated the same covariates to control for additional bias and for variance reduction (Bang & Robins, 2005). We also used robust standard errors to account for the propensity weights in each model.

Results

The goal of this study is to test whether previous removal is a risk marker for recidivism over a long term follow-up period among unauthorized immigrants identified within a local jail population. First, we present the simple bivariate relationships between rearrest and previously removed status over the nine-year follow-up period. Next we present the results for the

multivariate models that examine these relationships while holding constant other potentially confounding factors.

Bivariate analyses of recidivism

Overall, 71 percent of all 517 unauthorized immigrants were rearrested at least once in the nine-year follow-up period. Among those with a record of previous removal, 91 percent were rearrested at least once compared with 64 percent of those never removed. This is a significant and sizeable difference in likelihood of rearrest (Pearson chi2 =34.57, df=1, p<0.001). Among the 369 unauthorized immigrants who were rearrested at least once, rearrest occurred more quickly in the follow-up period for those with a record of previous removal. Specifically, over the nine-year (3,285 day) follow-up period, the average number of days until first rearrest among the previously removed was 251.27 (SD=400.58) compared with 484.03 (SD=603.21) for those never removed (t= 4.42, p<.001).

Table 2 shows the distribution of rearrests by previously removed status. After nine years, 62 percent of the previously removed immigrants had been rearrested three or more times compared with 38 percent of the never removed immigrants. A greater proportion of previously removed also had five or more rearrests relative to those with no record of prior removal (36 percent versus 20 percent respectively). The never removed group, however, contained a small number of individuals with the highest frequency of rearrest: One had 45 rearrests in the follow-up period, with the next three extreme outliers having 25, 22, and 20 rearrests, respectively. All of the previously removed immigrants had 19 rearrests or fewer.

The overall mean number of rearrests was 3.3 (SD=4.25). Previously removed immigrants had an average of 4.5 (SD=3.9) rearrests, while never removed immigrants had an average of 2.8 (SD=4.3) (t=-4.07, p<.001). The median number of rearrests for each group was 4

and 1, respectively. As discussed previously, three percent of the sample consisted of extreme

outliers on this measure, with a rearrest frequency of 13 or greater during the follow up period.

Removal of the 17 extreme outliers impacts the means for both groups slightly but does not

eliminate the significant difference between them. Absent the extreme outliers, the mean number

of rearrests for the previously removed group (n=132) is 4.0 (SD=3.0) and 2.4 (SD = 2.9) for the

never removed (n=368; t =-5.28, p<.001).

**Table 2. Number of Rearrests by Previously Removed Status
over the Nine-Year Follow-Up Period (N=517)**

	Nine-Year Frequency of Rearrests	
Number of Rearrests	Never removed (n = 378)	Previously removed (n = 139)
0	135 (36%)	13 (9%)
1	58 (15%)	14 (10%)
2	42 (11%)	26 (19%)
3	40 (11%)	12 (9%)
4	26 (7%)	24 (17%)
5	13 (3%)	7 (5%)
6	10 (3%)	11 (8%)
7	9 (2%)	8 (6%)
8	14 (4%)	4 (3%)
9	8 (2%)	2 (1%)
10	7 (2%)	7 (5%)
11	2 (1%)	1 (1%)
12+	14 (4%)	10 (7%)
	Pearson chi2=60.89, df=11, p<.000***	

p<.05*, p<.01**, p<.001***
Note: Percentages may not add to 100 due to rounding

The bivariate comparisons revealed that the previously removed were more likely to be

rearrested and to be rearrested more often in the follow-up period. These differences however

may be due to differing background characteristics. To examine this possibility, we conducted

multivariate analyses with propensity score weighting to equalize the groups on the observed

control variables. As shown in Table 3, the propensity score weighting procedure effectively

balanced the two groups on each of the 11 control variables. This can be observed through the

non-significant F-statistics (computed from the Pearson chi2 statistic with the Rao and Scott

(1981, 1984) second-order correction based on design effects).

We used the propensity score weights (and robust standard errors to account for them)

when estimating all multivariate models and included the baseline covariates to control for

additional bias and for variance reduction (Bang & Robins, 2005).

Table 3. Baseline Covariates Before and After Propensity Score Weighting (N = 517)

Variable	Previously Removed (n=139)	Not Previously Removed (n=378) Weighted Values		Test of Previously Removed and Not Previously Removed (weighted)	
		(weighted)	(unweighted)	Test Statistic	p-value
Country of Birth				$F^{db}=0.048$	0.826
Mexico	86%	86%	53%		
Other	14%	14%	47%		
Mean (SD) age at release	28.2 (7.8)	27.9 (7.5)	32.4 (9.7)	$F(1,516)=0.09$	0.766
Mean (SD) number of previous arrests	4.7 (4.3)	5.5 (6.0)	2.7 (3.9)	$F(1,516)=1.17$	0.230
At least one previous conviction	74%	76%	59%	$F^{db}=0.163$	0.687
Most serious charge = felony	48%	49%	31%	$F^{db}=0.012$	0.913
At least one person charge	17%	16%	22%	$F^{db}=0.001$	0.978
At least one property charge	19%	23%	15%	$F^{db}=0.312$	0.577
At least one drug charge	38%	37%	13%	$F^{db}=0.049$	0.824
At least one other charge	38%	38%	58%	$F^{db}=0.002$	0.967
Mean (SD) number of days in jail[1]	22.2 (30.0)	22.5 (28.6)	21.8 (28.5)	$F(1,516)=0.01$	0.936
Release type: Not convicted	54%	54%	47%	$F^{db}=0.002$	0.966

SD = Standard Deviation
F^{db} = Design-based F statistic testing weighted data
[1] Days in jail was capped at 100 due to extreme outliers in fewer than five percent of the cases

Multivariate analyses of recidivism

In multivariate analyses, we employed three different measures of long term recidivism: likelihood, frequency, and number of days until rearrest. First, we present the results of a logistic regression analysis testing whether the two groups of unauthorized immigrants differed on the likelihood of rearrest, while adjusting for baseline characteristics. As shown in Table 4, the results of this analysis revealed a significant difference between the two groups: the odds of having at least one rearrest during the nine-year follow-up period were 2.62 times higher for those with a record of previous removal, relative to those without. Other baseline characteristics significantly associated with rearrest were a higher number of previous arrests and age (younger immigrants were significantly more likely to have a rearrest than were older immigrants).

Table 4. Logistic Regression of Rearrest During Nine-Year Follow-Up Period (N = 517)

	Odds Ratio	Robust Std. Err.	z	P>|z|	95% Confidence Limits
Previously Removed**	2.62	.909	2.78	0.005	1.33, 5.17
Country of Birth – Mexico	1.01	.370	0.03	0.977	0.49, 2.07
Number of previous arrests***	1.25	.071	3.87	<0.001	1.11, 1.39
At least one previous conviction	1.21	.454	0.51	0.607	.582, 2.52
Age at release***	.932	.016	-4.00	<0.001	.901, .965
Most serious charge = felony	.631	.228	-1.27	0.203	.310, 1.28
At least one person charge	1.40	.873	0.54	0.591	.412, 4.75
At least one property charge	2.39	1.74	1.19	0.232	.573, 9.95
At least one drug charge	2.49	1.80	1.26	0.207	.604, 10.27
At least one other charge	1.00	.592	0.01	0.995	.316, 3.19
Number of days in jail	1.00	.005	0.74	0.459	.994, 1.01
Release type: Not convicted	1.55	.485	1.39	0.165	.836, 2.86

p<.05*, p<.01**, p<.001***

Second, we used the Cox proportional hazard regression model (Hosmer & Lemeshow, 1999) to examine the number of days until first rearrest during the nine-year follow-up period.

The hazard function represents the risk that an individual is arrested at a point in time, given that no arrest had occurred by that day. Using the same covariates and propensity score weighting as shown in Table 3, the results again indicate a significant difference between the groups. A record of previous removal was associated with fewer days until rearrest. Time until rearrest was also significantly associated with number of previous arrests and age at the time of 2002 jail release.

Table 5. Survival Analysis of Days Until First Rearrest During Nine-Year Follow-Up Period (N = 517)

	Coef.	Robust Std. Err.	z	P>|z|	95% Confidence Limits
Previously Removed***	.583	.158	3.69	0.001	.274, .893
Country of Birth – Mexico	-.003	.185	-0.01	0.988	-.366, .361
Number of previous arrests***	.070	.012	5.57	0.001	.045, .094
At least one previous conviction	.027	.180	0.15	0.879	-.325, .380
Age at release***	-.047	.010	-4.78	0.001	-.067, -.028
Most serious charge = felony	-.144	.205	-0.70	0.482	-.546, .258
At least one person charge	.213	.221	0.96	0.336	-.221, .647
At least one property charge	.130	.223	0.58	0.559	-.307, .567
At least one drug charge	.465	.238	1.95	0.051	-.001, .931
At least one other charge	-.066	.223	-0.30	0.766	-.504, .371
Number of days in jail	.001	.002	0.43	0.665	-.004, .006
Release type: Not convicted	-.129	.163	-0.79	0.430	-.449, .191

p<.05*, p<.01**, p<.001***

Figure 1 displays the survival function for the two groups of unauthorized immigrants, employing weighted data. As the figure shows, the two groups began to diverge early in the follow-up period, with the previously removed showing more immediate and rapid failure.

Figure 1. Days Until First Rearrest by Previous removal Status
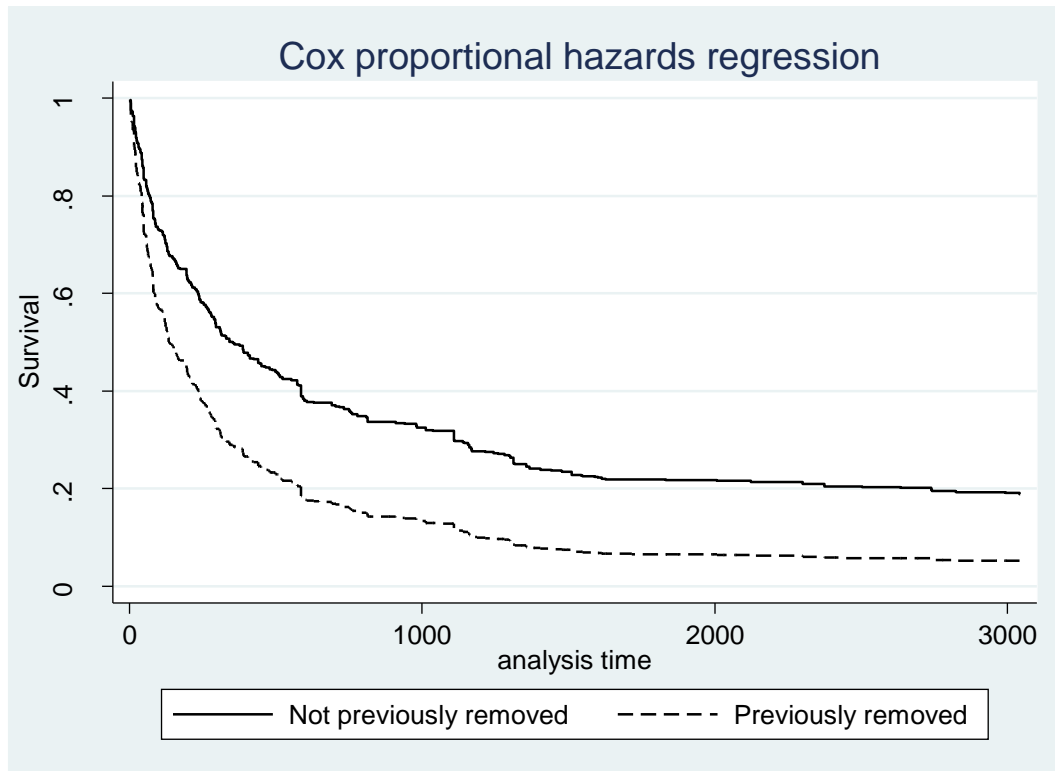
The final multivariate analysis tested whether there was a difference between the two groups in the frequency of rearrest during the nine-year follow-up period. In this analysis, we used negative binomial regression. It adjusts for overdispersion, relaxing the assumption that the mean and the variance of the number of rearrests are equal (Mccullagh & Nelder, 1989). As previously discussed, approximately three percent of the sample (n =17) were extreme outliers in frequency of rearrest and a sensitivity analysis revealed no differences in results for the key variable of interest. In the final results reported here, these extreme outliers were dropped because of their influence on three control variables, thus the final model presented in Table 6 describes the relationships for 97% of the sample (n=500). Results with the full sample of 517 included are available upon request.

As Table 6 shows, previous removal is a significant predictor of frequency of rearrest, while taking into account baseline characteristics. Other baseline characteristics significantly associated with the frequency of rearrest were a higher number of previous arrests and age at the time of release (younger immigrants were more likely to have a higher number of rearrests).

Table 6. Negative Binomial Regression of Frequency of Rearrest During Nine-Year Follow-Up Period (N = 500)

	Coef.	Robust Std. Err.	Z	P>|z|	95% Confidence Limits
Previously Removed**	.298	.010	2.98	0.003	.102, .494
Country of Birth – Mexico	-.045	.115	-.039	0.698	-.269, .180
Number of previous arrests***	.061	.013	4.66	<.001	.036, .087
At least one previous conviction	-.077	.137	0.56	0.574	-.192, .346
Age at release***	-.030	.007	-4.55	<.001	-.042, -.017
Most serious charge = felony	-.056	.111	-0.50	0.616	-.274, .163
At least one person charge	.170	.154	1.10	0.270	-.132, .473
At least one property charge	-.248	.202	-1.23	0.220	-.643, .148
At least one drug charge	.128	.173	0.74	0.458	-.210, .467
At least one other charge	-.254	.146	-1.74	0.081	-.539, .032
Number of days in jail	-.002	.002	-1.25	0.210	-.005, .001
Release type: Not convicted	-.240	.120	-2.00	0.045	-.474, -.005

p<.05*, p<.01**, p<.001***

Discussion

The present study is an examination of the long term recidivism patterns of a group of unauthorized immigrants identified in prior research as posing a significant recidivism risk. Specifically, Hickman and Suttorp (2010) found that a record of previous removal was a distinct risk marker for rearrest among unauthorized immigrants identified within a local criminal justice population. After one year, 73 percent of those with a record of prior removal had been rearrested compared with 32 percent of those without. Among those with a record of prior removal, 25 percent were rearrested 3 or more times within one year, relative to just 7 percent of

those with no prior removal. Even given these substantially large differences, there were no empirical grounds upon which to anticipate a priori the direction of the long term results with this population. Indeed, studies of recidivism within other criminal justice populations have found that short-term differences do not necessarily persist over the longer term (e.g., Johnson, 2004; Ostermann, 2013; Worrall, 2008). Indeed, Maltz (1984) argues that the convention of a one-year follow-up period in recidivism studies is often determined more by research funding limitations rather than by substantive decisions about the population under study.

The current study employs the same baseline data and replicates the methodology used in this previous study (Hickman & Suttorp, 2010) but extends the follow-up period from one year to nine years. Overall the long-term findings are remarkably consistent with the short-term findings. Previous removal remained a significant risk marker for recidivism, regardless of whether rearrest was measured in terms of likelihood, time-to-first rearrest, or frequency of rearrest. In comparison to similarly situated unauthorized immigrants with no prior record of removal, those with a record of removal were more likely to be rearrested; only 9 percent of previously removed immigrants had no record of rearrest during the nine-year follow-up period, compared with 36 percent of the never removed immigrants. Furthermore, previously removed immigrants were rearrested more frequently, with a mean number of 4.5 new arrests over the nine-year period compared with 2.9 for the never-removed unauthorized immigrants. The median number for each group was 4 and 1, respectively. The time-to-rearrest findings were consistent as well, with previously removed immigrants showing a much more rapid first rearrest. This latter finding, however, is not surprising given the one-year findings that 73 percent of the previously removed had already been rearrested in the first year.

In discussing the relevance of these results, we first discuss limits in their interpretation and then, within that context, offer comments on their potential utility. The study was not able to examine and compare types of rearrest. Therefore, if the two groups varied on types of rearrest charges (e.g., severity), these differences could not be detected. As with all studies relying on official criminal justice records, the present study employs data which captures at least as much about the behavior and operation of criminal justice systems and victim reporting practices as it does individual arrestees (Elliott, 1995; Geerken, 1994; Maltz, 1984). Moreover, we had no means of describing or controlling for the varying amount of time individuals may have been reincarcerated over the entire nine year follow-up period. For example, the first or any subsequent arrest during the nine-year period could have resulted in a lengthy incarceration, making that individual "ineligible" to recidivate again during the follow-up period. Of course, this is the case for any long-term study of recidivism that relies on rearrest measures.

In the context of immigration research, however, potential detection, detention, and removal by immigration authorities presents an additional risk that may also make individuals ineligible to recidivate. Indeed, ICE apprehensions of previously removed immigrants within the U.S. have increased during the study's follow-up period (GAO, 2011). We did not have access to follow-up immigration records from ICE or LESC for the sample and therefore cannot describe or control for the influence of immigration enforcement on these results. The increasing emphasis on immigration enforcement within criminal justice populations, however, could lead one to speculate that there was an increased risk of ICE apprehension and removal for the specific individuals in our sample. All criminal history factors being equal, ICE enforcement priorities suggest that the previously removed are at greatest risk of post-rearrest ICE detention and removal (relative to those LESC deems unauthorized but never previously removed).

Despite this increased enforcement, over the nine-year follow-up period of the present study (2003-2011) the previously removed were rearrested more frequently. All things being equal, if risk of detention and removal increased more for the previously removed, we would expect a *lower* frequency of rearrest relative to those with no record of previous removal. One potential explanation is that all factors were not equal. It may be that the previously removed are simply exceptionally high rate offenders (relative to those without a removal) and the increasing risk of ICE detention and removal suppressed what might otherwise have been many *more* rearrests. It may also be that some unmeasured characteristic related to both repeat arrests and previous removal accounted for much or all of the relationship between them. More research is needed on this population using data that includes immigration records of ICE apprehensions, detentions, releases, and removals during the parallel follow-up period. Absent access to this additional data source only speculation is possible.

With the available data, we had a limited ability to further explore the present findings related to frequency of rearrest. In that effort, we compared the two groups on the number of days until *last arrest* (rather than first) in the nine-year follow-up period. Among the 369 individuals who were rearrested at least once, the last rearrest occurred significantly more quickly on average for those with a record of previous deportation. Specifically, over the nine-year (3,285 day) follow-up period, the average number of days until *last rearrest* among the previously removed was 1,118 days (or 3.6 years; SD=899.6) compared with 1,627 days (or 4.5 years; SD=967.9) for those never removed (t= 4.91, p<.001). The nearly one year difference in time to last rearrest could potentially reflect a greater relative risk of detection, detention, and removal for those with a record of prior removal. In other words, it is possible that a larger share

of the previously removed become "ineligible" to recidivate later in the follow-up period by virtue of being identified and detained by ICE.

Despite its potential relevance to questions raised by Secure Communities, this study should not be interpreted as an assessment of the potential impact of the program. Secure Communities did not launch until 2008. By that point in the nine-year follow-up period, 70 percent of the individuals who were rearrested at least once had already experienced their final recorded rearrest. By the end of the (September) 2011 follow-up period, however, Secure Communities had been activated in approximately 50 percent of all U.S. jurisdictions (ICE, 2013b). Thus this specific program may have had some unmeasured effect late in the follow-up period.

Another challenge related to study of this population is that "previous removal" is not a static underlying individual characteristic. Any unauthorized immigrant may acquire the designation of "previously removed" if at any point they are apprehended by ICE. Indeed, ICE data suggests this has become more likely as removals from criminal justice populations have steadily increased over the study's follow-up period, from 81,626 in 2003 to 216,698 in 2011 (ICE, 2013c). This sizeable increase suggests that a record of previous removal was a less common distinction in 2002 than it may be today. Consequently, it is likely that at least some individuals within the sample treated as members of the unauthorized immigrant comparison group acquired a record of removal (or were under final orders of removal) during the study's follow-up period. Therefore our findings must be interpreted as more relevant to conditions that produced a record of prior removal in or before 2002.

Given the limitations of conducting individual-level recidivism research with this population, it is reasonable to question its utility. Through the universal implementation of

Secure Communities, willingly or not, local jurisdictions are now participating in locating

unauthorized immigrants for potential detention or removal. Therefore, unless Secure

Communities is substantially revisited by federal policymakers, the policy questions perhaps

most relevant today (at least for state and local officials) are not *whether* local law enforcement

should be involved in interior immigration enforcement; instead, they are (1) *where* their

resources can be most effectively applied, and (2) the circumstances under which their active

cooperation is supported by the communities they serve. These can be viewed as empirical

questions that fall within the purview of criminologists to help address. To date, our field has

conducted almost no work relevant to these questions, largely owing to the extreme difficulty in

accessing individual-level data on officially determined immigration status that can be merged

with criminal records. Indeed, the Los Angeles County Jail Foreign Born Inmates study

(Hickman et al., 2005) is a rare example of this sort of dataset.

While the present study alone by no means settles the question of whether previous

removal is a consistent indicator of high criminal recidivism risk, it provides at least some

empirical suggestion that this group may be worthy of local review and policy consideration. Los

Angeles County is one jurisdiction that has conducted its own reviews of previously removed

immigrant recidivism in its local context (CCJCC, 1990, 1997). As a result, it developed long-

standing County-level policies around active cooperation with ICE, in the case of previously

removed immigrants who are located within its jail population (CCJCC, 2002; Raymond et al.,

2004). Much more research is needed before any definitive conclusions can be drawn about

whether previous removal poses a distinct recidivism risk factor overall.

For now, state and local policymakers do not have the luxury of waiting (potentially

decades) for researchers to build a conclusive body of evidence before deciding what to do about

ICE requests for custody of specific arrestees through the Secure Communities process. The value of the present study is that it offers local and state policymakers some empirical evidence for consideration. For federal immigration authorities, the study offers an illustration of the potential value of sharing immigration records with academics for analysis and open publication. While the findings of the study offer support for ICE's current enforcement priorities, support is limited because of the lack of follow-up immigration records. While ICE does occasionally provide data to researchers for analysis, the resulting studies are generally not peer-reviewed and may not be released publically.

In building the body of research in this area, it is also necessary for other agencies within the federal government to take some responsibility for prioritizing and supporting immigration and crime research, as it has for research on many other crime-related topics posing pressing policy questions, such as community policing, domestic violence, and school violence.[5] The latter crime-related topics fall primarily within the enforcement responsibilities of local criminal justice systems, rather than the federal government. Yet, federal support has helped create the partnerships and the funding for academics to actively engage with local criminal justice agencies to access their records, to study the performance and decision-making of their personnel, and to collect data directly within their facilities and from individuals identified within their caseloads. It is hard to imagine the state of criminology today if we had never experienced this level of federal support for local criminal justice research. Given the federal role in immigration enforcement and control of the records critical to this area of study, a similar

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[5] We use the term "federal government" here for the sake of simplicity. There are multiple federal-level agencies in different departments and even branches of government with missions more or less relevant to the issue. For example, agencies within the Department of Justice's Office of Justice Programs fund crime-related research but it is also funded through the Department of Health and Human Services, the Department of Labor and others. The U.S. Congress also authorizes and prioritizes areas of research and the President also prioritizes specific research agendas. The Department of Homeland Security has funded some limited research studies and this is the key agency necessary to grant access to immigration records, and detention and removal processing.

level of federal commitment is needed to advance the field in the direction of empirically-

informed policy guidance in the era of Secure Communities.

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Marika Suttorp-Booth is a statistical analyst in the Statistical Research and Consulting group at the RAND Corporation. Her current work includes both criminal justice and health research, including an evaluation of the economic cost of drug abuse and the Healthy Passages Longitudinal Study of Adolescent Health project. She is also a member of the Southern California Evidence-Based Practice Center.