Extending Our Knowledge about Recidivism of Persons on Federal Supervision

Laura M. Baber
Office of Probation and Pretrial Services
Administrative Office of the U.S. Courts
Mark Motivans
Bureau of Justice Statistics

INTEGRAL TO THE FEDERAL probation and pretrial services system's long-term strategic goal to become a result-driven system, the Office of Probation and Pretrial Services (OPPS) of the Administrative Office of the U.S. Courts (AO) continues its pursuit of understanding criminal recidivism. The roots of this effort are far deeper than academic curiosity. To the contrary, OPPS is pursuing a larger, system-wide objective articulated by the leaders of the court system over a decade ago. In 2000, the Federal Judicial Center (FJC) sponsored a futures-planning session at its biennial conference for federal probation and pretrial services chiefs. At this conference, the leaders of our system reached widespread consensus that Congress and the public will hold the federal justice system increasingly accountable for outcomes, and that we must rise to that challenge by clearly articulating desired outcomes, rigorously measuring progress, and communicating results with fidelity. That conference planted the seed of the system's shared identity and strategic goals. Since then, OPPS has taken steps to clearly articulate our goals in national policies, promote a common understanding of those goals, operationalize measures that speak directly to those goals, and build an infrastructure that promotes systematic measurement of results (Hughes, 2008).

By 2010, OPPS had built a foundation for independently measuring its system's most salient outcome—protection of the community through reduced recidivism by those clients our officers supervise on post-conviction supervision. We were able to learn definitively for the first time the extent to which persons under federal supervision engage in new criminal activity, both while on supervision and for a follow-up period after supervision ended. (For reasons we will discuss later in this article, this entailed overcoming challenges that had up until then constrained researchers' abilities to study recidivism on a large scale.) That year, OPPS released the results of a study that examined recidivism, using our system's agreed-upon definition—rearrest for new criminal activity. In formal consultation with experts in the field through an Ad-Hoc Panel on Methodology, OPPS adopted rearrest as a primary outcome measure because: 1) unlike convictions, arrests are more available in automated criminal history records; and 2) unlike revocations, arrests are not subject to court culture and probation officer influence, and as such, are a more independent measure (Hughes, 2008). OPPS developed a method for assembling and matching criminal rap-sheet data to clients' records to measure the rate at which offenders were rearrested for new criminal activity. In 2010, OPPS released the results of a study that examined recidivism using the system's agreed-upon definition—rearrest for new criminal activity (Baber, 2010). In this study, OPPS learned that about 23 percent of our offenders under supervision for three years between the years October 1, 2004, and August 13, 2009, were rearrested for a new criminal offense and about 18 percent were rearrested within three years of supervision ending (Baber, 2010).

An important aspect of the AO's outcome-driven culture is active collaboration with other federal criminal justice agencies to further our understanding of federal recidivism. One of the agencies the AO collaborates most closely with is the Bureau of Justice Statistics (BJS). As the agency responsible for collection, analysis, publication, and dissemination of statistical information on crime, criminal offenders, victims of crime, and operations of the criminal reporting information systems on crime in the United States, BJS has an interest in understanding recidivism of persons under all jurisdictions, including federal. Over the years, BJS has conducted several recidivism studies of individuals released from prison using criminal history data from the FBI (Beck & Shipley, 1989; Langan & Levin, 2002; Langan, Schmitt, & Durose, 2003).

Present Study

In 2010, BJS issued a solicitation (2010-BJ-CX-K069) for a study that would build on both BJS's expertise over the last two decades in reporting nationally-representative recidivism findings and the federal probation and pretrial services' system's more recent success in understanding recidivism of persons on post-conviction supervision. The solicitation sought expertise to generate recidivism information on clients under federal supervision in the community and determine whether and to what extent recidivism is affected by offender, probation office, and probation officer characteristics. In 2011, a cooperative agreement was awarded to Abt Associates in response to

this solicitation. The study of recidivism was completed under a collaborative cooperative agreement among BJS, Abt Associates, the AO, and the FBI.

A secondary purpose for this collaboration—but perhaps one of more long-term significance—is that it will position both agencies to improve their respective criminal history data assemblage protocols. In 2010, under contract with Abt Associates, OPPS developed a large-scale automated criminal history data assembly protocol. This protocol—developed for the sole purpose of understanding the outcomes of clients under federal supervision—overcomes a challenge that has historically constrained criminal justice agencies from assembling arrest data on a large scale. Concurrently, BJS is undertaking a similar but far more expansive effort to assemble criminal history data into a database suitable for recidivism studies on all populations and jurisdictions the agency studies. While there are differences in the outputs produced by these two protocols, in their essence, both protocols address the same obstacle. That is, because arrest data appear in disparate formats in individual state repositories, historically researchers were required to read, interpret, and hand-code arrest data from hard-copy "rap sheets." This made large-scale research prohibitively expensive, time-consuming, subject to error, and therefore practically impossible. OPPS overcame this problem by developing ways to access criminal record "rap sheets" en masse without human intervention, to parse narrative text strings that describe arrests, and to translate those texts into dates and offense codes. To accomplish this, OPPS developed software to feed in batches of hundreds of thousands of FBI numbers and state identifiers to Access to Law Enforcement (ATLAS), a browser-enabled front-end to the International Justice and Safety Network, known as NLETS. The result is that rearrest data on hundreds of thousands of federal clients are in computer-readable form suitable for OPPS researchers to study (Baber, 2010).

Recently BJS designed a new software system to convert large samples of criminal history records directly into a standardized database that can readily be used to conduct recidivism studies on large cohorts of offenders in the criminal justice system. Basically, this software system was designed to 1) request and obtain the rap sheets of all offenders in a study's cohort; 2) read these rap sheets in their raw form and extract (or parse) common data from individual rap sheets that vary greatly in structure, format, and content from state to state; and 3) organize these extracted data in their original form into a relational database that could serve research purposes. The study on federal recidivism described in this article used rap-sheet data generated by this parsing software system.

The secondary component of the collaborative contract is a comparison of the results of the AO-developed criminal history data assembly protocol used for earlier iterations of the AO's recidivism research with those produced by BJS's new software system. That work remains pending at the time of this writing. When completed, however, it will provide independent validation of BJS's protocol for producing a standardized data file and further that project's goals of creating a relational database that could serve a variety of research purposes, including the AO's future recidivism analysis for outcome measurement.

The first major component of the collaborative contract, the study on recidivism as it is influenced by contextual factors of office and officer characteristics, has been completed. From this study, we sought to learn how district and officer characteristics affected outcomes of clients during and following supervision, an area yet unexplored by OPPS. This study also expanded upon prior OPPS work by examining overall failure rates that include both rearrest and revocation. This study also furthered an understanding of the nature and timing of revocations for supervision. The remainder of this article describes the study and summarizes what we have learned. The report in its entirety, entitled "Recidivism of Offenders on Federal Community Supervision," may be found on the National Criminal Justice Research Service website at http://www.ncjrs.gov/App/publications/abstract.aspx?ID=263106.

Rearrests and Revocation of Supervision

The study examined revocation rates, arrest rates, and rates that combined both measures, both during and post-supervision. These measures are consistent with the goals of supervision as articulated in Judicial Conference policy—that is, protection of the community by minimizing criminal activity during supervision and beyond, and maximizing successful supervision. This study expanded upon earlier work by furthering our understanding of the nature and timing of revocations for supervision.

Study Cohort

The study cohort comprises clients who began active supervision between October 1, 2004, and September 30, 2010, representing 245,362 terms of supervised release (TSR) and probation. Less common types of supervision such as parole and conditional release were not included in the study because of their statutory and other differences. This study used data from five sources:

1. Probation and Pretrial Services Case Management System (PACTS)

PACTS is the case management system used in all federal probation and pretrial services offices and is a rich source of information about offender characteristics, instant offenses, terms of imprisonment, supervision sentences, and the court-ordered conditions for treatment services, financial obligations, and other restrictions that provide specific parameters of the supervision. OPPS creates a national database of all persons charged and convicted of federal offenses by daily merging the separate databases in each of the 94 federal districts. When multiple districts supervise a single client during his or her supervision term, different personal identifiers and court docket numbers may be employed by each of the supervision districts. Therefore, researchers needed to merge supervision terms for the same client by matching on multiple criteria. The result was that each supervision term was represented once, even for supervision terms that have been transferred—both with and without transfer of jurisdiction—across multiple districts.

PACTS data are the backbone for the study. PACTS records a key outcome of clients' supervision—whether their term ended "successfully" by expiration or early termination of the term or "unsuccessfully" by revocation, which frequently results in the offender's return to custody.

2. Officer Profile Survey Data

For the past several years, OPPS has annually surveyed federal probation officers about their level of education, primary field of study, years of experience, and languages spoken. The data for this study, obtained in a survey conducted in 2011, were matched with PACTS records that indicate the officer(s) assigned to supervise the offender. The study team matched approximately 80 percent of the survey data with PACTS data on the clients in the study

cohort.[1] Specifically, we obtained the number of years of experience as a federal probation officer, the number of years of experience in law enforcement (including state and local experience), and the education level of the officer. At the time of this survey, there were 5,745 law enforcement officers in the federal probation and pretrial services system.[2]

Because it is not uncommon for an offender to be supervised by more than one officer during the supervision term, the team analyzed the cases' movement from officer-to-officer. We found that for 60 percent of clients, a single officer supervised the case throughout, and that it is relatively uncommon for an offender to have three or more officers. Nearly 40 percent of clients in the cohort had two or more officers; about 17 percent three or more, about 7 percent four or more, about 3 percent had five or more, and less than one percent had six or more.

For purposes of this study, when more than one officer supervised an offender, the team identified the *primary officer* as the officer who spent the largest proportion of time with the case. Across all cases in the cohort, a single officer accounted for 87 percent of the time in calendar days on average. The self-report survey of officers that OPPS conducts annually gathers data on officers' education, languages spoken, and experience, both in the federal system and with other law enforcement agencies.

While this study did not examine the effect of officer continuity on recidivism, we consider the relatively high continuity revealed by this study encouraging. While longevity, with its inherent stability of the officer-client relationship, does not itself guarantee rapport, such longevity suggests greater opportunity to establish and maintain rapport, an important ingredient of officers' ability to elicit long-term positive changes in clients they supervise. Research supports that the quality and nature of the relationship between the client and the supervision officer have an impact on outcomes (Paparozzi & Gendreau, 2005; Skeem et al., 2007). Further, building positive rapport with clients has been shown to have a beneficial effect on outcomes and an enhancing effect on service delivery (Taxman, 2008a; see also Taxman et al., 2004).

[1] Though the response rate was high (93 percent), not all officers completed the survey. Further, some officers who had supervised clients in the cohort had since left the federal system. Source: OPPS Decision Support System (internal system).

[2] OPPS internal Decision Support System (DSS).

3. Offender Residential Community Data from U.S. Census Bureau

The research team used these data to analyze what effect, if any, the characteristics of the clients' residential community had on recidivism. The researchers analyzed 14 tract-level variables relevant to education, unemployment, household and per capita income, poverty status, and housing ownership. Using principal components factor analysis, the researchers reduced these 14 factors to 1 factor that explained most of the variance and was used to represent the measure of poverty and transience of the census tract in which the offender resided. Designed to be relatively homogeneous units with respect to population characteristics, economic status, and living conditions at the time they are established, census tracts generally contain between 1,000 and 8,000 people, with an optimum size of 4,000 people (U.S. Census Bureau). The clients' geo-coded addresses in PACTS were aggregated to tract-level and were merged with the U.S. Census Bureau data.

4. District-Level Data from FedStats

FedStats is a portal to databases of statistics compiled by over 100 federal agencies. Data from FedStats is provided at the judicial district level and for this study the following district-level variables were used: estimated population, the net 5-year change in population, average household income, and proportion of American Indians/Alaskan native persons.[3] Because offenders from Indian country represent a unique population in the federal system, the proportion of American Indians/Alaskan native persons was analyzed to provide a gauge of district-level differences in recidivism based on this aspect of population composition.

5. Arrest Data

These data were used to provide the basis for examining recidivism defined as new criminal conduct for this study and were extracted from the rap sheets of clients under supervision and for a follow-up period after supervision has ended. As discussed above, arrest data were parsed from rap sheets using software developed by BJS, and those arrest events were merged with the data from PACTS and other sources described above. Because clients may have multiple arrests during the study period, the first chronological arrest was considered to be the recidivism event. The arrest data from the arrest strings in the rap sheets were translated into National Crime Information Center (NCIC) codes, which are ordered by offense seriousness. When multiple arrests occurred on the same day, the study team used the NCIC ordering to select the most serious offense to be tabulated. Because jurisdictions vary considerably in the fidelity with which they report minor offenses, for purposes of this study, only arrests for felony-level offenses were tabulated. When the level of offense was missing from the rap sheets, researchers imputed the level based on how states categorize the offense. If the offense is categorized as a felony 75 percent or more of the time, the offense was categorized as a felony. These data provide the basis for examining recidivism defined as new criminal conduct for this study and other studies conducted by OPPS.

[3] http://www.fedstats.gov/mapstats/fjd/51fjd.html provides district-level data through 2007.

Findings: Overall Recidivism, Revocation, and Rearrests within Five Years

Overall recidivism rates that include revocation and rearrests are calculated for clients received for supervision between October 1, 2004, and September 30, 2005 (the FY2005 cohort), since those clients could be observed for five years (n=38,896).

Over 38 percent of clients in the fiscal year 2005 cohort recidivated within five years of commencing supervision. Almost 25 percent were rearrested and 13.5 percent were revoked.[4] Table 1, an excerpt from the report, shows the rates for clients sentenced to one, two, and three years of supervision. Clients sentenced to longer supervision terms have higher failure rates.

Together drug, property, and violent offenses comprise approximately 80 percent of all new arrests within five years of commencing supervision for the FY 2005 cohort. Drug offenses comprised almost 30 percent, property offenses 26 percent, and violent offenses slightly more than 23 percent. The study team was unable to classify approximately 6 percent of the new arrests. The remaining 15 percent

[4] Unlike statistics reported on OPPS's internal Decision Support System, revocation rates tabulated in this report are mutually exclusive of arrests tabulated; therefore, the rates reported on this report and in DSS will differ slightly. The tabulations in DSS use the actual date of closing by revocation for the supervision term. For this report, the date of revocation was associated with the arrest date pursuant to warrant for either technical or new criminal conduct violation. Since this report was produced, researchers further refined the date that triggers tabulation of a revocation to be the date of sentencing on the revocation as stored in PACTS.

of arrests, each of which represented less than 3 percent of the total, were for firearms, immigration, escape/obstruction, sex offenses, public order, and other offenses.

Findings: Revocation and Rearrests Within Three Years While on Supervision

Revocation and rearrest rates during supervision include only those clients received for supervision between October 1, 2004, and September 30, 2007, since those clients could be observed for three years (n= 119,126). Many of the clients who began supervision after that time were still under supervision. Including the clients who were still on supervision would underestimate the rates, so ongoing terms were omitted from the tabulations.

Results reveal that 19 percent of clients serving a three-year term of supervision were rearrested and about 14 percent were revoked. Table 2 provides one-, two-, and three-year arrest and revocation rates for clients in that cohort. The types of offenses associated with new arrests of persons under supervision closely parallel the offenses in the overall recidivism rates. Together drug offenses (28 percent), property offenses (25 percent), and violent offenses (24 percent) comprise more than three-quarters (77 percent) of all first arrests tabulated for those under supervision within three years of commencement. All other offense types, including approximately 6 percent that we were unable to categorize, comprised the remainder.

Findings: Contextual Factors as Predictors of Recidivism

The research team built a predictive model of revocation and rearrests using offender demographics and risk and protective factors. The risk and protective factors were derived from supervision case plans that were completed by officers for clients under supervision. At the time of this study, data from the Post Conviction Risk Assessment (PCRA) were not available for merging with other study data, although the risk and protective factors identified in this report were found to closely align with the PCRA domains and responsivity factors, or barriers, that are well-established in the community corrections literature (Gendreau, Little, & Goggin, 1996; Andrews & Bonta, 2006). The study team identified several factors that increased clients' risk of committing new offenses or being revoked:

- Longer criminal histories
- Gender (male)
- Greater indications of substance abuse problems
- Greater indications of mental health issues
- Higher levels of unemployment and basic needs, such as adequate housing

Protective factors that decrease a client's risk of new criminal conduct and revocations included:

- Strong social support system
- Strong skills and motivation
- Fewer medical needs
- Increased age

TABLE 1.

Recidivism Rates for Clients Sentenced to One, Two, and Three Years of Supervision (for the FY2005 Cohort)

Sentenced	Recidivism Rates (Arrests, Revocations, and Overall)				
	Within 1 year	Within 2 years	Within 3 years	Within 4 years	Within 5 years
1 Year					
Overall	16.2%	21.3%	25.1%	27.8%	29.7%
Arrest	7.6%	12.4%	16.2%	18.9%	20.8%
Revocation	8.6%	8.9%	8.9%	8.9%	8.9%
2 Years					
Overall	18.4%	28.2%	32.4%	35.5%	37.8%
Arrest	9.1%	14.1%	18.2%	21.3%	23.7%
Revocation	9.4%	14.1%	14.2%	14.2%	14.2%
3 Years					
Overall	18.3%	28.1%	34.3%	37.8%	41.0%
Arrest	10.3%	16.1%	19.9%	23.3%	26.4%
Revocation	8.0%	12.1%	14.4%	14.5%	14.5%
Total					
Overall	18.0%	26.9%	32.3%	35.6%	38.4%
Arrest	9.6%	15.1%	18.9%	22.2%	24.9%
Revocation	8.3%	11.9%	13.4%	13.5%	13.5%

TABLE 2.

Recidivism Rates While on Supervision for Clients Sentenced to One, Two, and Three Years of Supervision (for the FY 2005–FY 2007 Cohorts).

Sentenced	Recidivism Rates (Arrest and Revocation)		
	Within 1 year	Within 2 years	Within 3 years
1 Year			
Arrest	7.7%	—	—
Revocation	9.0%	—	—
2 Years			
Arrest	8.9%	13.4%	—
Revocation	9.8%	14.5%	—
3 Years			
Arrest	10.3%	16.0%	19.1%
Revocation	7.9%	11.9%	14.2%

Findings: District-Level Variables as Predictors of Recidivism

Using the predictive model, the research team examined variation in recidivism across districts and district-level variables. Several district-level variables explain variation in arrest and revocation rates across districts.

The team found that, when risk and protective factors are held constant:

- Districts with large populations had somewhat lower arrest rates and revocation than districts with small population size.
- Districts that experienced an increase in population between 2000 and 2006 had higher rates of rearrests and revocations.
- Increased percentage of Native Americans in the district was associated with a statistically significant increase in revocations, but there was no similar effect on arrests.
- Arrests and revocations were found to vary with household income. New arrests increased with income but revocations decreased with income.

Recidivism and the Offender's Environment

To examine the effect that an offender's environment has on recidivism, the study team analyzed the factor score derived from 14 variables associated with the Census tract of the offender's residential address. The team found that, not surprisingly, when other risk and protective factors are held constant, the neighborhood where an individual resides is an important factor in successful completion of supervision. The factor score provides a measure of poverty and transience. The factor score had a positive effect on both revocations and new arrests. (The size of the effect is 0.92, at $P<0.001$. The size of the effect for revocations is 0.90, significant at $P<0.001$.) While the study did not examine the prosocial aspects of an offender's environment per se, poverty and transience may suggest a non-prosocial environment. As such, this finding is consistent with literature that indicates that lack of prosocial support and low levels of vocational and educational skills are predictors of failure on supervision (Gendreau & Andrews, 1990).

Recidivism and Officer Characteristics

Analysis of officer profile survey data reveals that supervision officers are on the whole highly educated and experienced. Officers have a minimum of a bachelor's degree. Slightly less than half have a master's degree, and a few have doctoral degrees. On average, a federal offender is supervised by a probation officer who has 10 years of experience. Twenty-five percent are supervised by officers with 6 or fewer years of experience. Including state and local law enforcement experience, officers' average experience is 11 years.

An important question is whether the relatively high level of education and experience of probation officers pays dividends in terms of reduced recidivism and revocations. At first, the findings appear counterintuitive; that is, holding offender risk and protective factors constant, both arrest rates and revocation rates *increase* with officer experience in the federal probation system. Likewise, arrest and revocation increase when the supervising officer has an advanced degree. One might expect probation outcomes to improve with probation officer experience and education, but that is not the case. We can speculate about this finding from the research on Evidence-based Practices (EBP). The research suggests that regardless of the education or experience level of officers, if supervision is not consistent with risk, needs, and responsivity principles, there is no theoretical basis to believe that officer education and experience by itself will impact offender outcomes (unless principles of EBP are entrenched in their education/experience). Furthermore, research has demonstrated that the most effective approach for changing behavior in the community supervision context is through cognitive behavioral techniques, which involve specific techniques designed to alter clients' dysfunctional thinking patterns. Bonta et al. (2010) affirmed the relationship between specific core correctional skills and the effectiveness of supervision officers, noting that those officers trained in core correctional skills used the skills more often, and that their clients had lower recidivism rates than clients supervised by untrained officers. The existing research (Trotter, 1996; Taxman, 2006; Bonta et al., 2008) is encouraging and points to a need for further research on the training of community supervision officers who provide direct service to clients. Recent AO research that compares the outcomes of clients who were supervised by officers trained in Staff Training Aimed at Reducing Re-arrest (STARR) versus those that were not trained provides further evidence. Using an experimental design, the study finds that officers trained in specific strategies for use during direct supervision of clients used effective strategies more often post-training, and that client outcomes were positively affected. Clients supervised by the experimental group of officers after the training had superior outcomes, even after controlling for individual client-level characteristics. This effect was most pronounced on moderate-risk clients (Robinson, VanBenschoten, & Alexander, 2011).

Promising Developments in Recidivism Research

Along with parsing raw rap sheets into a relational database containing the original text found on the rap sheet, BJS embarked on an effort to convert the raw rap sheet information into nationally standardized codes. The combined parsing and conversion software system can then be used for other cohorts to produce a database with rich information about study cohort members' criminal history, including nature of the offense, arresting agency, dates of arrest, and disposition of the charges associated with the arrest. The BJS software stores the complete criminal histories in an analytic database; as a result, the database can be used to capture both criminal histories before a specific event (e.g., placement on probation) and recidivism patterns following that event, enabling these data to support a range of research requirements.

As BJS's capabilities to produce research-ready criminal history repositories reach maturity, our agencies have a unique opportunity to leverage our respective efforts. We plan future collaborations in which both agencies can leverage their strengths to further advance the study of recidivism of federal clients. While the population on federal supervision is a proverbial "drop in the bucket" compared to the numbers in state and local systems, the numbers are far from trivial. As of this writing, there are more than 130,000 clients on post-conviction supervision. Forecasts project that this number will continue to grow modestly but steadily over the next decade. Fortunately, technical advances in the field demonstrate promise in large-scale recidivism research that will help public policy makers understand the nature and causes of recidivism. More than a decade after the FJC's future search conference, federal criminal justice stakeholders have not forgotten that promise to themselves.