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CHANGES TO THE
UNIFORM CRIME REPORTING (UCR) SYSTEM

INTRODUCTION

The Uniform Crime Reporting (UCR) system is a national data collection effort established in 1930 under the auspices of the International Association of Chiefs of Police. The UCR is based on the submission of crime-related information by approximately 16,000 federal, state and local law enforcement agencies. The UCR program is administered nationally by the Federal Bureau of Investigation (F.B.I.), which publishes an annual summary of UCR data: "Crime in the United States." The statewide UCR system in Pennsylvania is administered by the State Police, which publishes "Crime in Pennsylvania" annually. The F.B.I. is in the process of changing the national UCR format from a summary to an incident-based reporting system. This issue of the *Justice Analyst* reviews the scope and implications of the transition to the new, National Incident-Based Reporting System (NIBRS).

Under the traditional (summary) system, each contributing law enforcement agency submits monthly reports containing information on the number of reported offenses and the number of persons charged (arrested or summoned), across 26 offense categories. These offense categories are divided into eight "Part I" (more serious) and 18 "Part II" (less serious) crimes. The reporting agencies also furnish information on the age, sex and race of the victims of those crimes occurring in a given month. More detailed information is requested concerning the crimes of homicide, arson and ethnic intimidation.

One of the main limitations of the summary or aggregate UCR system is the inability to link the different pieces of information supplied across individual crimes. For example, according to the 1992 edition of "Crime in Pennsylvania," a total of 21,361 robberies were reported in 1992. A total of 8,105 robbery arrests were reported (7,481 males and 624 females). The 1992 UCR data also contain aggregate victim information: of the 18,114 reported robbery victims, 11,692 were male and 6,422 were female. Knowing this, one might pose the question, "were victims of female robbers more likely to be females?" Unfortunately, the aggregate UCR data sets currently available are of little help in answering such questions, because they only contain separate totals for arrestees and victims, with no way of linking offender and victim data across crimes (except for a very few offenses such as homicide).

The new, incident-based UCR system is designed to capture much more detailed information on crimes than under the summary system. One obvious difference is that the new system permits more definitive classification of offenses. The traditional UCR captures incidents and arrests for the eight Part I offenses and arrest totals only for the Part II offenses; only the most serious offense is recorded for each crime incident. The new UCR captures information on 46 "Group A" offenses representing 22 categories of crimes and on 11 "Group B" offenses; up to 10 different offenses per incident may be recorded.

Under the NIBRS system, the unit of analysis is the criminal incident: "one or more offenses committed by the same offender, or a group of offenders acting in concert, at the same time and place" (F.B.I., 1993, p. 25). For each Group A criminal incident reported under NIBRS, more than 50 pieces of information (data elements) are requested. This information is organized into six segments and includes data on the specifics of the offense, property involved, victim(s), offender(s) and arrestee(s), if any. (Only arrestee data are requested for Group B offenses.) By recording known facts about each reported incident, the NIBRS system yields a much more valuable data set with increased utility for the law enforcement community and for researchers. Of course, collecting, recording and storing this more detailed information puts additional burdens on law enforcement personnel throughout the UCR system, especially at the local level. In fact, NIBRS was designed to be generated by an automated (computerized) law enforcement management information system.

STATUS OF POLICE DEPARTMENT AUTOMATION

A central concern relative to the implementation of the NIBRS/UCR system nationally (and in Pennsylvania) is the lack of automated records keeping in smaller police departments. According to a national survey of larger (over 100 officers) state and local agencies conducted by the Bureau of Justice Statistics in 1990, over 90% of responding agencies use personal computers and about 80% use mainframes. About 75% of the agencies maintain computer files on UCR data (Reaves, 1992, p. xii).

There are approximately 1,200 police departments in Pennsylvania, most of which have ten or fewer full-time officers. The PCCD conducted a survey of the state's police departments in 1993 to determine their extent of automation. Over 60% of the 610 responding departments indicated that they had exclusive use of computer equipment. An additional 14% either shared computer resources or relied on others for this service. The remaining 25% of respondents had no access to computers. Thirteen percent of the departments reported that they currently submit their local UCR data to the State Police on diskettes. The extent of automation was directly related to the size of the department: two thirds of the departments with ten or fewer full time officers had access to computers while all of the departments with at least 50 officers had access. Also, the larger departments were more likely to use mainframe and mini-computers while the smaller departments tended to rely on personal computers.

In response to the need to automate more of Pennsylvania's small to medium sized police departments, the Pennsylvania Law Enforcement Management System (PA-LEMIS) was developed with funding from the PCCD and the Bureau of Justice Assistance.

PA-LEMIS is a public domain system which can be economically adopted by any police department with personal computer capability. In its current form, PA-LEMIS is able to handle a department's traditional (summary) UCR reporting requirements. The system generates both hard copy summary UCR reports and a diskette-based file which contains the summary UCR information in a format conforming to the specifications established by the Pennsylvania State Police. The PA-LEMIS system is not currently able to handle UCR reporting requirements under the NIBRS system. However, the system does contain all of the required NIBRS data elements. PA-LEMIS is therefore "NIBRS compatible" and the PCCD is working with the program authors to develop specifications for such a modification of the software package (to be completed by June 1994).

Approximately 100 police departments in Pennsylvania are currently using a version of PA-LEMIS. A 1992 survey of departments which had obtained PA-LEMIS indicated that most were very satisfied with the system's performance. A PA-LEMIS "user's group" has been formed to allow departments which have the software to meet on a regular basis to share ideas and experiences.

STATUS OF NIBRS IMPLEMENTATION AND RESEARCH

Only a few states submitted NIBRS data to the F.B.I. during 1991 and 1992. The F.B.I. anticipates that by 1994, 40% of the states will participate in the NIBRS reporting system (Reaves, 1993). However, most of these states will not have fully converted to the new system, in that only a minority of their jurisdictions will report incident-based data. Participating states submit their NIBRS reports on data tapes. Because of the detailed information collected on each incident, data storage requirements are large. NIBRS data

files covering an entire state's annual submission might require a dozen or more tapes and over a billion bytes of storage space. These requirements are beyond the computer resources available to many potential researchers. Consequently, many researchers will need to work with smaller data files, perhaps covering fewer jurisdictions or only certain categories of offenses.

Pennsylvania has not yet adopted the NIBRS/UCR system. The change to the new system will be accomplished gradually over a period of years. The Pennsylvania State Police (PSP) expect to begin testing the NIBRS system during 1994. A major part of the transition will involve obtaining and installing new software on the PSP mainframe computer. As previously mentioned, the PCCD is working to modify the PA-LEMIS system so that it can produce the required NIBRS/UCR reports in a computer-readable format which meets the specifications of the PSP. Once this modification is accomplished, a few selected police departments now using PA-LEMIS will submit their UCR data to the State Police in NIBRS format as part of the testing process.

With only a few states currently reporting under NIBRS and in light of the data storage requirements mentioned above, relatively few analyses of NIBRS data have been published. Some states currently certified as NIBRS-participating (e.g., Alabama, Idaho, North Dakota and South Carolina) have included NIBRS data analyses in their published annual UCR reports. The Bureau of Justice Statistics (BJS) recently produced a report based on 1991 NIBRS data from Alabama, North Dakota and South Carolina (Reaves, 1993). This data set covers nearly all the jurisdictions in those three states. Some highlights of the BJS sample analyses of rape and robbery incidents in these states help illustrate the research potential of NIBRS data.

Within this three-state data base, a total of 3,801 rapes and 11,618 robberies were reported during 1991. Only rapes involving a male offender and female victim were included in the BJS analysis. In 72% of the incidents of rape, the victim knew the offender (e.g., family member, boyfriend). A gun or knife was used in 12% of all reported rapes and in 26% of the incidents in which the offender was not known to the victim. More rapes were reported during June, July and August (an average of ten per day) than during any other months. Over half of all reported rapes occurred during the eight-hour period from 8 P.M. to 4 A.M. Almost all (88%) reported incidents of rape were intra-racial in nature (the offender and victim were of the same race).

The BJS analysis of robberies within the three states is based on 8,394 incidents involving an individual victim; 3224 robberies of commercial establishments were not included. Guns were used in 35% of the robberies and knives in 10% of the incidents. Victims were injured in 31% of the robberies; minor injuries were reported about four times as often as major injuries. Victims were injured in 33% of the incidents when the offender used a knife in committing the robbery compared to only 14% of the cases in which a gun was used. The most frequently reported location of a robbery (42% of the incidents) was a roadway or alley. More than half (56%) of the robberies occurred between 8 P.M. and 4 A.M.

SAMPLE ANALYSIS OF PA-LEMIS DATA

The PCCD recently completed a NIBRS-related demonstration project using law enforcement data from one jurisdiction, the borough of Bellevue, Pennsylvania. The goal of the project was to use PA-LEMIS data from a sample jurisdiction in an attempt to simulate the type of data which will eventually be routinely available under the NIBRS/UCR system. It is important to stress that this project was designed to demonstrate research possibilities rather than to answer substantive research questions, given the limited data from a single jurisdiction.

The borough of Bellevue is located in suburban Allegheny County, Pennsylvania, just outside of Pittsburgh. Comprising less than one square mile, the borough's population is about 9,200. The Bellevue Police Department employs 22 employees, of whom 13 are full-time sworn police officers. This department was one of the first to use PA-LEMIS. As a result, Bellevue had almost three years of data. Also, Bellevue is fairly typical of medium sized departments using PA-LEMIS. The 1992 UCR crime index rate (Part I crimes) for Bellevue was 4,507 reported crimes per 100,000 population, slightly higher than the Allegheny County rate of 4,045. Violent crime is relatively rare, with larceny-theft the most prevalent crime. Total reported offenses (Part I and Part II combined) average about 800-900 per year.

This analysis is based on Bellevue's PA-LEMIS data files covering the period from November 1, 1990 through September 9, 1993. The data set contains 2,826 criminal cases, including 266 involving crimes against persons. The brief analysis presented here considers all the cases in the data base, as well as three subsets of cases: (1) the 266 offenses against persons; (2) 154 assaultive offenses (134 simple and 20 aggravated assaults); and (3) 52 sex offenses (26 forcible and 26 non-forcible). One of the goals of this project was to develop simple offender and victim "profiles" for each set or subset of cases.

A total of 743 arrests were recorded for the 2,826 cases, yielding a "clearance rate" of about 28%. The data set contained information on 1,783 individual victims. Table 1 contains summary demographic information on arrestees and victims for each of the

Table 1
SUMMARY OF ARRESTEE AND VICTIM DEMOGRAPHIC DATA FOR VARIOUS OFFENSE PROFILES

	ARRESTEE DATA				VICTIM DATA			
	All offenses	Person offenses	Assault offenses	Sex offenses	All offenses	Person offenses	Assault offenses	Sex offenses
Maximum valid N	743	75	55	10	1783	229	139	47
% MALE	80.1	81.3	78.2	100.0	51.4	37.1	43.9	14.9
% WHITE	90.1	81.1	76.4	100.0	96.0	93.8	94.2	91.3
% ADULT	63.4	64.0	60.0	90.0	87.8	61.1	56.1	57.4
MEDIAN AGE	21.4	22.7	23.4	23.7	33.0	21.0	19.0	21.0

four offense profiles. Considering first all offenses in the data set, arrestees were pre-dominantly male, white and adults (18 or older). Victims, across all offenses, were overwhelmingly white and over age 18, but males and females were almost equally represented. There were 229 cases involving crimes against persons in which the victim was known to be an individual. The profile of offenders against persons differed from the profile of all offenders in that the former arrestees were slightly more likely to be non-white. Comparing victims of all crimes to victims of person offenses, the latter were more likely to be female, juveniles, and younger.

Assaultive arrestees differ little from the profile of all alleged offenders in terms of sex, status and age, but they are slightly more likely to be non-white. Victims of assault, however, are more frequently female and are younger on average than victims in general. In the very small sample of alleged sex offenders, all ten arrestees are white males. Victims of sex offenses are predominantly white and female.

The data in Table 1 actually could have been obtained from the current, summary reporting UCR system. As mentioned earlier, a major limitation of that system is the inability to link offender and victim information across most criminal incidents. Using the incident-based data collected via Bellevue's PA-LEMIS system, it is possible to tabulate offender and victim demographic characteristics. A very simple example of this is provided in Table 2.

Among the 1783 cases with individual victims, an arrest was made in 337 cases. The left half of Table 2 cross-tabulates victim and offender status. Overall, 21% of victims are juveniles. However, in cases in which the arrestee is a juvenile, 34% of the victims are also under age 18. In other words, there is a tendency for adult offenders to victimize other adults and for juvenile offenders to victimize other juveniles, relative to the 21% "baseline" juvenile victimization rate.

The right half of Table 2 contains the corresponding cross-tabulation of victim and offender sex. Overall, half of the known victims for all crimes in

Bellevue during the study period are female and half are male. Victims of female offenders are slightly, but not significantly, more likely to be female than male (55% compared to 45%). Although females represent half of the victims of all crime in Bellevue during the study period, it was noted in Table 1 that females are the most frequent victims of person offenses.

Consistent with NIBRS/UCR requirements, the PA-LEMIS system captures information on the locations of crimes and the use of force. For example, crimes against persons in Bellevue are most likely to occur in a residence (34%), a residential district (23%) or a commercial district (17%). While females are the victims of crimes against persons in most cases, males are more likely to be victims of crimes which occur in a commercial district or on a highway. Data are also available on the use of force in crimes against persons. Among cases for which this information is recorded, personal force (hands, fists, etc.) is the most common type used (71% of the cases) and minor injuries are the type most typically sustained (38% of the cases).

Table 2
VICTIM AND ARRESTEE CHARACTERISTICS FOR CASES WITH INDIVIDUAL VICTIMS

ARRESTEE STATUS	VICTIM STATUS			ARRESTEE SEX	VICTIM SEX		
	ADULT	JUV.	TOTAL		FEMALE	MALE	TOTAL
ADULT	186 87%	29 13%	215 100%	FEMALE	32 55%	26 45%	58 100%
JUVENILE	81 66%	41 34%	122 100%	MALE	135 48%	144 52%	279 100%
TOTAL	267 79%	70 21%	337 100%	TOTAL	167 50%	170 50%	337 100%

SUMMARY

The transition to a national incident-based reporting system is expected to provide numerous research applications, including the examination of victim/offender relationships, spatial analysis (location) of crime and the use of weapons (Coyle, Schaaf and Coldren, 1991). The NIBRS system has the potential to complement the adoption of "problem-oriented policing" (community policing) by many law enforcement agencies since NIBRS data can help identify typical circumstances under which crimes occur. However, the analyses presented in this article demonstrate that knowledge of these circumstances does not necessarily empower police to prevent crime. The BJS analysis of rape, for example, showed that the victim knew the offender in over 70% of the reported cases. This fact suggests that most rapes could not be prevented by "putting more police on the streets." Rather, rape prevention may be promoted by educating women about the dangers of acquaintance rape or providing counseling to couples in stressful relationships, for example. Similarly, the analysis of Bellevue's data showed that almost half of all crimes against persons occurred in a home or apartment; this figure was even higher for female victims. If these crimes are being committed by offenders related or known to the victims, they are not likely to be prevented by any increased police presence. However, if the perpetrators are strangers, then more frequent police patrols of appropriately targeted neighborhoods or apartment houses may be effective. Incident-based reporting systems such as NIBRS are capable of recording the specific locations of crimes (for example, by city blocks). Law enforcement officials are better able to target high-crime areas by conducting "spatial analyses" of reported crimes over a period of time.

The NIBRS/UCR system is a potentially useful tool for both law enforcement personnel and criminal justice researchers. Adoption of the system on a national scale will require a large investment of resources, including computer hardware and software, increased data collection and input, and training. Based on Pennsylvania's experience with the PA-LEMIS system, this investment is not beyond the reach of smaller police departments which rely on personal computer-based systems. Larger departments will likely require minicomputers or mainframe systems to accommodate their larger volume of data. The investment required to automate should be offset, in part, by improved efficiency. Prior to acquiring the PA-LEMIS system, the Bellevue Police Department required the service of a civilian employee for 80 hours per month to complete the summary UCR forms. That position has now been eliminated, at considerable savings to the department.

The transition to the NIBRS/UCR system will require several years. By the time the new reporting system is completely implemented, the full operational and research applications of the system should be better understood.

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Reaves, Brian A. 1993. *Using NIBRS Data to Analyze Violent Crime.* U.S. Department of Justice, Bureau of Justice Statistics, Washington D.C.

For more information on PA-LEMIS call or write: Linda Rosenberg, Pennsylvania Commission on Crime and Delinquency, P.O. Box 1167, Harrisburg, Pennsylvania 17108-1167, (800) 692-7292 or (717) 787-5152.

To obtain a copy of the BJS Report "Using NIBRS Data to Analyze Violent Crime," call (800) 732-3277 and request document #NCJ-144785.