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Author(s): Deborah L. Weisel Ph.D. ; Ronald V. Clarke Ph.D. ; John R. Stedman

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FINAL REPORT
TO THE
NATIONAL INSTITUTE OF JUSTICE

HOT DOTS IN HOT SPOTS: EXAMINING REPEAT VICTIMIZATION for Residential Burglary in Three Cities

by
Deborah Lamm Weisel, Ph.D.
N.C. State University

Ronald V. Clarke, Ph.D.
Rutgers University

John R. Stedman
Visiting Scientist, National Institute of Justice

December 31, 1999

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CHAPTER I:
THE NEED FOR RESEARCH

A small but steadily increasing body of research on police effectiveness has accumulated over the last three decades. Beginning with the Kansas City preventive patrol experiments in the 1970s (Kelling et al, 1974) , an examination of the need for rapid response (Spelman and Brown 1984, Farmer 1981), a query into the limitations of follow-up investigations (Eck, 1982, 1979; Greenwood, Petersilia and Chaiken, 1977) and continuing with experiments with problem-oriented policing in Newport News and Baltimore County MD (Eck and Spelman, 1987), studies have increasingly questioned the effectiveness of traditional police methods.

Questions about the effectiveness of police services have given way to more detailed examinations of how police think about and respond to crime problems (Goldstein 1979, 1990; Eck and Spelman, 1987; Sherman 1992). Indeed, the onset of community policing initiatives in the 1990s, in which thousands of American police agencies launched community-based approaches, has further pointed to the need to provide tools and information to police for thinking about and responding effectively to a wide range of crime problems. Crime mapping, repeat offender initiatives, situational crime prevention techniques, targeting hot spots, problem-solving models and a cadre of other approaches have been developed to improve police effectiveness. The examination of repeat victimization described in this report follows in this vein of improving police understanding of crime problems as a way to improve police effectiveness.

The notion of examining repeat victimization is quite simply to sort out the contribution of multiple victimization to aggregate crime. The concept that some offenders, victims and

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places account for a disproportionate amount of crime is well-established in the literature (Sherman, 1995, 1989; Sherman, Gartin and Buerger, 1989; Goldstein, 1990; Spelman and Eck, 1989; Farrell and Pease, 1993; Eck 1997a). Indeed, police strategies targeting repeat offenders and high-crime areas or hot spots are well-established. Little has been done, however, to identify patterns of repeat victimization (Sherman, 1992; Goldstein, 1990), and little is known about the contributions of repeat victims to high-crime locations.

Identifying the fundamental elements of repeat victimization is a rich area for research as it holds great promise for further improving police delivery of services in America. If repeat victimization can be identified among people and places, police have a unique opportunity to intervene in the process and ward off subsequent offenses. As such, the ability to locate repeat victims offers police an opportunity to combine prevention and deterrence focused very specifically on the people -- and probably the places -- which need it most. In this way, understanding of repeat victimization is highly promising method to inform police practices.

In the spirit of continuing the examination of crime to enhance police effectiveness, the Police Executive Research Forum undertook a research study to document the phenomenon of repeat victimization in three cities — Baltimore, Dallas, and San Diego — within a single offense type, residential burglary. The research project funded by the National Institute of Justice was developed to shed light on three major areas of the repeat victimization phenomenon — the incidence of repeat victimization both city-wide and in high crime areas, the time course for repeat victimization, and the relative impact of a police-focused problem-solving treatment on the incidence of repeat victimization and its contribution to aggregate offenses in an experimental area. A primary objective of the study was to develop a replicable method using

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police offense data which could be easily carried out by police practitioners across the nation. Given the inherent potential for reducing crime by targeting repeat victimization, the study included a treatment component, in which local police engaged in problem-solving strategies to address their crime problem.

An important element of this research study was to understand what precisely constitutes a repeat victim.. Despite widespread research and police attention to repeat victimization in Great Britain and Australia, there has been no standardized definition of repeat victimization. Of course, the absence of a definition is similar to the dilemma of defining a hot spot, as there are no well-established procedures for defining the area, crimes and time frame which form a hot spot (Mammalian et al, 1999; Harries 1999). This study articulates a preliminary definition of repeat victimization to facilitate comparison across and within cities.

Identifying repeat victimization is not an end, but a starting point of understanding the crime problem being examined. Indeed, recognition of repeat victimization should point police to a way of understanding the "local chemistry" of crime problems (Tilley et al, 1999). There are likely many subsets or types of repeat victims for different types of crimes. Indeed, the research on residential burglary described in this report pointed to varied victim groups including the elderly, poor persons or renters who were unable to adequately secure points-of-break in, and others. It is worth noting that these subsets of victims may not be geographically clustered and might easily be overlooked if examining repeat victimization within a single hot spot or other geographic area.

This report describes research conducted on repeat victimization from 1997 to 1999. In Chapter II, we describe what is known about repeat victimization, summarizing the literature

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predominately from Great Britain over the last decade. In Chapter III, we describe the method in which this research was carried out, including procedures for cleaning and managing data, establishing definitional parameters, and development of interventions to reduce burglary. In Chapter IV, we describe the findings of the study highlighting the patterns of repeat victimization identified in each city and the variations within and across cities. We examine the prevalence, the incidence and the concentration of repeat victims as well as the time course in which subsequent victimization occurred. In Chapter V, we offer an interpretation of the findings, including laying out the need for additional research on the topic to build a corpus of information on repeat victimization.

This report is quite preliminary in nature. The selections of crime and data types constitute a preliminary examination of repeat victimization in the United States. Decisions were made about data cleaning, data management and interpretation which have implications for understanding repeat victimization. There are some notable limitations to the research findings and the findings point to the need for additional research on repeat victimization. Despite this caveat, our findings have convinced us that identification and understanding of repeat victimization has great promise for aiding the police in discovering crime patterns and delivering services more effectively to both prevent and reduce crime.

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CHAPTER II:
WHAT IS KNOWN ABOUT REPEAT VICTIMIZATION

Despite recent declines in crime in many large cities across the nation, crime continues to trouble the American public. Property crimes are especially prevalent—in 1997, nearly 2.5 million burglaries, 1.3 million motor vehicle thefts and 7.7 million larcenies were reported to the police (FBI, 1998)—and the vast majority of these crimes remained unsolved[1]. Despite the prevalence of crime, one promising approach to understanding and controlling crime has emerged in the last decade—the phenomenon of repeat victimization.

As Skogan noted:

> "Probably the most important criminological insight of the decade has been the discovery in a very systematic fashion of repeat multiple victimization...You get this tremendous piling up of crime in places...So this notion of finding ways of measuring on the one hand and, in policy terms, responding to repeat multiple... is one of the most important kinds of ideas out there that criminologists have to contribute to practice" (Brady 1996: 3)

Studies of repeat victimization illuminate the disproportionate contribution to overall crime rates of persons and places that are repeatedly victimized. This phenomenon of repeat victimization is closely related to "hot spots" research (Sherman, 1990; Sherman and Weisburd, 1995; Spelman 1995) in which specific addresses, intersections, or clusters of addresses generate a disproportionate amount of reported crime. Studies of repeat victimization—like those of repeat offenders and hot spots—suggest that focused efforts of police—concentrated in time and space on problematic areas or problematic people—have a much greater likelihood of impact on problems than do preventive or random activities spread across time and space (Pease 1998; Goldstein 1979, 1990; Eck and Spelman 1987).

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With some exceptions, recognition of repeat victimization is relatively recent in the United States. The phenomenon, however, has been widely recognized in the United Kingdom. In fact, British police and researchers have studied and responded to the phenomenon with considerable success for several years. Repeat victimization is so widely recognized that police in the United Kingdom are now held accountable for the incidence of repeat victimization as a measure of police performance (Tilley 1995). This accountability is based upon the premise that once police are aware of a victimization, they should be responsible for taking steps to insure that it does not recur.

Recognition of the repeat victimization phenomenon is only recently increasing in the United States. In 1996, the National Institute of Justice (NIJ) published an article on repeat victimization by two respected British criminologists (Pease and Laycock 1996). In the same year, the Police Executive Research Forum (PERF) highlighted repeat victimization research at its annual Problem-Oriented Policing Conference. In addition, in 1997, PERF began an NIJ-funded study of repeat victimization for residential burglary in three cities—Baltimore, Dallas, and San Diego. This research was undertaken to learn more about repeat victimization and to test the effectiveness of problem-solving to reduce the problem thus reducing aggregate burglary rates. This report highlights findings from that study.

While the broad-based focus on repeat victimization is new, interest in the subject is not. Beginning in the 1970s, research began to demonstrate that some people were disproportionately harmed by crime (Johnson et al. 1973; Zeigenhagen 1976; Hindelang et al. 1978; Fienberg 1980; Reiss 1980; Nelson 1980; Sparks 1981).

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[1] An estimated 14% of burglaries were cleared; 20% of larcenies; and 14% of motor vehicle thefts (FBI, 1998).

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Since these early studies, researchers and police have learned even more about the phenomenon. More recent victimization surveys support the earlier research that there is a concentration of incidents among a small number of victims (Ellingworth, Farrell and Pease 1995; Spelman 1995). In some cases, up to 70% of crimes are experienced by 14% of respondents (Farrell 1992). Hakkert and Oppenhuis (1996) report that 17% of robbery victims are repeat victims.

Consistently across crime types, being a victim once is a good predictor of being a victim again. Once a residence has been burgled, it is four times more likely to be burgled again than is a house that has not been burgled at all (Forrester, et al. 1998). Sampson and Phillips (1992) report that, for racial attacks, 67% of the victims suffer subsequent victimizations. For school crimes, Burquest et al. (1992) report that 98% of all the crimes at 33 schools in Merseyside were repeats at the same location. Bennet (1995) reports that "as many as 35% of all burglaries recorded in the area [are] one of a repeat series of burglaries." Repeat victimization does vary by crime type: 90% of domestic violence cases are repeats; 61% of burgled small businesses are repeats, and 8% of motor vehicle theft victims account for 22% of incidents (Bridgeman and Hobbs 1997). Personal crime is even more concentrated than property crime ((Trickett et al. 1992; Pease 1993, 1998; Trickett et al. 1995; Farrell 1995).

Importantly, rates of repeat victimization vary within cities as it is clustered in high crime areas or hot spots (Sherman 1989, 1995; Bennett 1995; Spelman 1995; Pease 1993, 1996, 1998; Pease and Laycock 1996; Bennett and Durie 1996; Guidi et al. 1997; Trickett et al. 1992, 1995; Farrell 1995). Repeat victimization also varies by city, along with crime rates and crime variations within cities.

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Police offense data is a good source for estimating repeat victimization but it is imperfect as a large proportion of crime is unreported. Thus, police offense reports yield extremely conservative estimates of repeat victimization by undercounting of the phenomenon. This undercounting of crime victims is exacerbated in areas where reporting rates are low—areas in which crime is high (National Board for Crime Prevention 1994; Farrell and Pease 1995; Shover 1991; BJS 1995; Mukherjee et al. 1997). Indeed, persons who are repeatedly victimized are even less likely to report subsequent victimizations to police (Mukherjee et al. 1997). Even direct victim surveys in the United States and the United Kingdom also undercount repeat victimization (Genn 1988; Farrell and Pease 1993).

The strength of police offense data for understanding repeat victimization is that it provides important insight into the time course during which subsequent victimizations occur. Numerous studies show that the occurrence of repeat victimization is rapid for all crime types (Forrester et al. 1988, 1990; Pease 1991, 1998; Polvi et al. 1990; Farrell 1992; Farrell and Pease 1993; Spelman 1995; Guidi et al. 1997). Half of burglary revictimization occurred within 7 days of the first incident (Polvi et al. 1990), repeat victimization for racial attacks is most frequent within the first week of the initial attack (Sampson and Phillips 1992). Half of second offenses against businesses occurred within six weeks (Tilley 1993); and 79% of repeats against schools occurred within one month (Burquest et al. 1992).

This rapid recurrence of victimization provides a window of opportunity for police to prevent subsequent victimizations. Repeat victimization can be targeted by the police and reduced, resulting in lower crime rates (Chenery et al. 1997; Pease 1998). Residential burglaries in one city were reduced by 24% and other burglaries by 5%; in another city, a 27% drop was

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obtained. In a third city that focused on repeat victimization a 72% reduction in burglaries was achieved over three years (Bridgeman and Hobbs 1997). By focusing on repeat victimization, racial attacks in East London were reduced by 12%, and the percentage of students who said they were the victim of school bullying declined from 62% to 47% in one school and 72% to 48% in another.

Connection between Problem-Solving and Repeat Victimization

In the United States, problem-solving has been used in police departments for more than fifteen years (Goldstein 1979; Eck and Spelman 1987) and much has been learned about what happens when agencies attempt its implementation (Eck and Spelman 1987; Goldstein 1990; BJA 1997). A problem-solving approach emphasizes careful analysis of problems, development of responses based on that analysis, and an evaluation of the impact of the response on the problem (Goldstein 1979; 1982; Eck and Spelman 1987; Goldstein 1990; BJA 1997; Cosgrove, Reuland, and Huneycutt 1998). The broad objective of problem-solving is to get police to look at crime and disorder problems in new ways and develop specific responses to reduce those problems.

One promising tool for problem-solving is the notion of repeat victimization as a way to understand and control crime. As discussed, numerous studies of repeat victimization illuminate the disproportionate contribution to overall crime rates of persons and places that are repeatedly victimized. The recurrent involvement of these persons and places in crime are often the essential elements identifying and defining a "problem" ; and the process of their identification is a key element of the analysis necessary for effective problem-solving to occur.

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The use of problem-solving techniques to develop responses to repeat victimization would seem to be a crime fighter's dream—it helps focus limited resources on likely victims in an effort to deter and/or apprehend offenders. In doing so, the most victimized are protected and the incidence of crime overall is reduced (Pease 1991, 1998; Farrell and Pease 1993; Bennett and Durie 1996). In practice, however, there are difficulties to successfully identifying repeat victimization and applying problem-solving efforts.

Problem analysis is a key step in problem-solving, although it often is the most difficult step for the police to accomplish. Often, analysis is completely absent or cursory (Goldstein 1990; Reuland, Cosgrove and Oettmeier 1998; BJA 1999). In fact, most officers have little experience or training in analysis and many get lost in the process or make their analysis efforts too cumbersome to succeed. The objective of analyzing problems is to uncover information about a problem that suggests a unique response. Successful analysis creates a cognitive insight for problem solvers, presenting them with new information that helps them to see the problem in a new light.

Unfortunately, problem-solving groups all too often gather limited information, often using police records. Meaningful analysis requires problem solvers to gather data and use it to come to an understanding of a problem. Guidance for analyzing and interpreting data has not been readily available, however repeat victimization provides a tool for understanding offense data better. Offense data are readily available to police and can be used more effectively to focus police resources.

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Offense data for residential burglary are readily available for analysis and prodigious as thousands of Americans are victimized by residential burglary[2] each year. Shover (1991) reports that 72 percent of U.S. households will be the targets of burglary at least once in 20 years. Residential burglary is a serious crime not only because of the costs associated with the loss of property, but also because of the psychological costs to victims. Victims of burglary often feel violated and vulnerable long after the crime. Forrester, Chatterton, and Pease (1988) report that prior to a burglary, 58 percent of burglary victims worried about leaving their homes unoccupied. After being burgled, that number rose to 83 percent. Stockdale and Gresham (1995) report that the crime people feared most was having their home burgled. Victims, especially women living alone, often experience stress, degradation and "violation" (Hough and Mayhew 1985).

There has been considerable research on burglary and how to prevent it (e.g., see Shover 1991). While burglaries have declined substantially in recent years -- falling 1.8 percent from 1197 top 1997 -- burglary continues to be a widespread problem. According to FBI data, there is a burglary every eleven seconds in the United States. In 1997, there were 2.5 million burglaries reported to police nationwide (FBI 1998). About two-thirds of those were residential burglaries, accounting for about 14 percent of ***all*** reported crime.

Even these numbers underestimate the prevalence of such crimes. There is considerable evidence that burglary is underreported to the police. Rates of victimization are "highest for renters, households headed by blacks, Hispanics, or young people, and households located in central cities," but reporting rates are higher for middle or higher income victims (Shover 1991;

[2] For the purposes of this proposal, residential burglary is defined as the "unlawful entry of a structure to commit a felony or theft" (FBI 1998).

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BJS 1995). Shover (1991) reports that "in the United States, about one-half of all household burglaries are reported to the police."

Despite its prevalence, residential crime is not intractable. Indeed there is evidence that focused crime prevention efforts can reduce burglaries in targeted areas. Lindsay and McGillis (1986) report that a community crime prevention effort (block watch organizing, property marking and home security inspections) in Seattle reduced participants' burglary victimization by 61 percent. Likewise, Schneider (1986) reports that homes studied in the Portland 1973 burglary prevention program (crime prevention education, property engraving and posting of crime prevention decals) had burglary rates 31 percent lower than in those households that did not participate. Eck and Spelman (1987) reported a 35 percent drop in apartment burglaries in a study area after a crime prevention intervention (on-site police substation and target hardening) program. Simple measures such as interviewing more neighbors at the scene of crimes (Coupe and Griffith 1996) resulted in increased apprehension of offenders; and property marking (Laycock 1985) caused a substantial decline in burglary victimization.

The most effective crime prevention responses seem to be those developed through a combination of the problem-solving approach and situational crime control (Hope 1994). Problem solving (Eck and Spelman 1987) involves identifying particular and persistent problems, analyzing the problems, developing and implementing responses, and assessing results. Situational crime prevention (Clarke 1994) is the use of methods "(1) directed at highly specific forms of crime (2) that involve the management, design, or manipulation of the immediate environment in as systematic and permanent way as possible (3) so as to reduce the opportunities for crime and increase its risks as perceived by a wide range of offenders." In

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England, police and researchers have used this combination of problem solving and situational crime prevention to focus on repeat burglaries. In the Kirkholt estate, Forrester et al. (1988) adopted an approach that allowed them to specifically tailor their responses (replacement of pre-payment fuel meters, security upgrading, community support teams, and cocoon neighborhood watches) and focus on repeats. Burglaries fell to 40 percent following their burglary prevention efforts (Forrester et al. 1990).

Anderson and his colleagues (1995) employed a three-level response system related to the number of prior burglaries. After the first victimization, a response includes rapid property repairs, security upgrading, victim letter, victim support and cocoon watch (Neighborhood Watch for the immediate area). After a second burglary, the victim is visited by a crime prevention officer, a police watch (directed patrol-type activity) begins, police awareness stickers are posted, and mock occupancy devices are used at the dwelling. Following a third victimization, portable alarms, increased police watch, and closed circuit television are employed. The program achieved a 30 percent reduction in burglaries within six months (Holt 1995) and the number of repeat burglaries dropped by 60 percent.

Problem-solving appears to hold particular promise for reducing the prevalence of residential burglary.

Defining Repeat Victimization

Identifying the incidence and prevalence of repeat victimization for burglary or other crimes is not complicated, but it is a process made more complex by the way in which one defines a repeat victim (Pease 1996, 1998). There are three critical elements to the definition of

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repeat victimization—specifying a period of time during which a repeat may occur; selecting a person, place or object as the unit of analysis; and determining whether any crimes suffered by the same victim are counted as repeats or if only crimes of the same type count (National Board for Crime Prevention 1994; Pease 1995, 1996, 1998; Bridgeman and Hobbs 1997).

The absence of a standardized or uniform time frame for analyzing repeat offenses has been a flaw in understanding the nature of repeat victimization. Anderson et al. (1994), for example, examined eleven months of data; Forrester et al. (1988), Lauritsen and Quinet (1995), and Hakkert and Oppenhuis (1996) looked at one year; Bennet (1995) and Guidi et al. (1997) analyzed eighteen months; and Hope (1995) and Sampson and Phillips (1995) used a period of three years. Even longer, Polvi et al. (1990) based their research on four years, while Sorenson et al. (1991) included any sexual assault that occurred in a victim's lifetime. Since the time frame used to determine repeat victimization significantly alters the findings, this inconsistency across studies has compromised comparisons across varied sites and crimes (Farrell and Pease 1993; Pease 1995, 1996, 1998).

A one-year calendar period is the time period typically available and used in American police agencies for reporting and analysis of crime trends. This time frame is convenient and meaningful to police although it does underestimate the true incidence of repeat victimization. A calendar year period makes it impossible to link subsequent victimizations across calendar years artificially truncating or breaking up serial patterns. For example, a robbery that occurs in December of one year cannot be linked with its successor that occurs in January of the following year. Despite this limitation, which provides an extremely conservative estimate of repeats,

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analyzing repeats within a single-year period provides a standardized benchmark for purposes of comparison across cities.

Specification of a victim is the next element in defining repeat victimization. For burglaries (commercial and residential), the place (specific street address) is typically considered the victim (Forrester et al. 1988; Anderson et al. 1995; Pease 1995, 1996; Guidi et al. 1997); for commercial robberies, the victim may also be considered as the place (Pease 1995; Hakkert and Oppenhuis 1996); for motor vehicle thefts the person (owner), the object (motor vehicle) or the place (parking lot) may be considered as the victim (Anderson et al. 1995; Pease 1995). Bridgeman and Hobbs (1997) report that "most [police] forces are defining a repeat victim as a person or place that experiences a similar offense, for example, a burglary followed by another burglary or attempted burglary." When defining repeat victims, Pease (1996, 1998) recommends that the police should focus on offenses of the same type; use a time period of six months or one year; and count attempts towards repeats.

The third element of the definition concerns whether to include more than one crime type. For example, if a person's home is burgled and he or she is also the victim of an auto theft, is the individual considered a repeat victim? Pease (1998) recommended only considering crimes of the same type when defining repeat victimization.

Once a definition of repeat victimization has been determined, data collection can begin. This is often a difficult and time consuming process and presents a challenge to identifying repeat victimization in offense data (Anderson et al. 1995). Hough and Tilley (1997) provide a listing of common data problems:

- *Poor data quality*—Often there are errors in the recording of data on police reports and/or the entry of that data into the automated system.

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- *An inability to manipulate the data*—It is often difficult for the police data systems to identify repeat victimization of the same address or same person (Farrell and Pease 1993; Ellingworth et al. 1995).

- *Difficulty assigning a specific location to an incident*—Many offenses occur in open spaces, rather than a specific address, making it difficult to assign a specific location to the offense for analysis purposes.

- *Data sharing problems*—Often a good analysis, in addition to using crime data, involves using land use, street or road, or demographic data, but the format of these files are often incompatible with each other.

- *Failure to integrate crime analysis and crime intelligence data*—Often police agencies maintain numerous, yet separate, calls for service, crime and intelligence data base systems that have no linkage between them.

- *Inadequate data classifications*—Crime data may be grouped into aggregate categories for statistical reporting, obscuring important differences in types of offenses, or information on victim places (say apartment number) may not be captured as a separate field, if at all.

While these data problems present barriers to reliably identifying repeat victimization, recognition of these data problems is a starting point for addressing analytical challenges. Once resolved, analysis of repeat victimization can be used as a routine part of crime analysis and police response. Once data problems have been addressed, the promise of repeat victimization to assist police with identifying recurrent problems and developing effective responses through prevention, deterrence, and apprehension can be realized.

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CHAPTER III:
EXAMINING AND RESPONDING TO REPEAT VICTIMIZATION

Despite some inherent difficulties in using offense data to document the phenomenon of repeat victimization, research in this area has demonstrated great promise for the police. The concept of repeat victimization can be used as an analytical tool for developing effective interventions to reduce crime (Forrester et al. 1988; Anderson et al. 1995; Bennett and Durie 1996; Weisel and Stedman 1998). While offense analysis to identify the incidence and prevalence of repeat victimization is not an end in itself, findings provide useful guidance for police to carry out further analysis. Repeat victimization also offers a way to use crime prevention techniques very specifically and efficiently rather than generally applying them to all comers. As such, crime prevention can be conceptualized and delivered as a specific deterrence rather than as a general deterrence model. Perhaps, more importantly, the research demonstrates the need to sort out police functions of crime prevention, investigations and first responders, including the transfer of responsibility from one unit to another. These findings are discussed in detail in Chapter 4 of this report.

Previous repeat victimization studies have demonstrated the pressing need to develop a standardized definition of repeat victimization – particularly a definition which has relevance to police practitioners; to collect solid data about the incidence of repeat victimization across diverse jurisdictions and crimes; and to build American-based research on this important criminological phenomenon.

For this study, there were two primary research objectives. First, the study sought to examine police offense data to document the citywide and area-level nature of repeat

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victimization, analyzing its contribution to total burglary rates and determining its time course.

Secondly, the study sought to test repeat victimization analysis as a way to inform and improve the effectiveness of problem-solving efforts. In the study, area-level police in each city developed and implemented a 12-month "treatment package" designed to address and prevent repeat burglaries within a targeted area. The "treatment package" was developed following an analysis of burglaries in the target area – the analysis was predominately of repeat offenses. The treatment included some methods such as target hardening, access control, and informal and informal surveillance of premises.

By drawing on effective crime prevention techniques, the experiment attempted to measure the effectiveness of problem-solving efforts by police on reducing the likelihood of residential burglary revictimization and determine how this criminological phenomenon affected aggregate crime rates. Thus, the research design, which involved the 12-month intervention in an experimental area and a comparison of burglaries with a matched control area which received no special treatment, was developed to yield information on revictimization and on the effectiveness of focused problem-solving efforts.

To overcome the limitations of reported police data, the study augmented official police records with a survey of victims who reported being burgled during the treatment period. Surveys of burglary victims in the experimental and comparison areas were conducted in each of the three cities. The survey process began two months after the implementation of the treatment and continued throughout the treatment period and for two months after the period ends. This time lag was designed to incorporate the time period during which revictimization was most likely to occur.

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Throughout this study, the term "repeat victimization" refers to the burgled dwelling or household rather than the individual(s) occupying that dwelling. Although residents are obviously the true crime victims rather than the residence itself, the residential address provides the best means for data matching. Since families do move from dwellings, defining repeat victimization by address only has a practical advantage in analyzing data already captured in police records. In effect, as Pease (1995) noted, defining repeat victims as "place" incorporates the important notion of hot spots. Victimization as defined by place may be inappropriate for some types of crime but it is a good measure for burglary where the victim remains the same unless the occupant moves.

Site Selection

Three major cities were selected and agreed to participate in the study on revictimization. There were several requirements for participation. Cities were required to demonstrate a willingness to participate in research, dedicating resources as necessary for the full 12 months of the experiment, as well as assisting with data collection. No monetary resources were provided to the cities for developing or implementing responses, although PERF provided an on-site staff member to coordinate data collection, and monitor implementation of the project. Sites were also required to have a demonstrated ability to precisely match addresses for burglary incidents to the level of apartment number; and sites were selected which were geographically varied.

The sites selected for the study were all cities with large population bases and thus sufficient numbers of burglaries to ensure an adequate sample size for two comparable geographic areas with high numbers of burglaries. Each of these cities experienced a large

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number of burglaries annually. Although burglaries declined citywide during the course of the study, at the time of site selection, San Diego reported about 13,000 burglaries annually; Dallas, 18,000; and Baltimore, 16,000 (FBI 1995). Additionally, areas selected for treatment and control were required to have a sufficient number of burglaries to ensure adequate sample size.

Sites were also selected based upon a track record of successful experiences and commitment to problem solving or community policing. At the time of selection, San Diego was considered a leader in the field of community policing and problem- solving, while the Baltimore police commissioner went on to become the director of the national Community Oriented Policing Services office in Washington, a testament to the organizational commitment. The Dallas Police Department also had a strong organizational commitment to community policing. Since the study was designed to test the impact of problem solving, and not the process, sites in which police were substantially engaged in community policing were selected.

The cities involved in this research were also selected because of their agencies' ability to handle the extensive data management requirements of this project. Consistent with the needs stated by Sherman (1989), repeat call analysis, a critical component of the proposed design, required automated call records; sufficient data storage capacity for analyzing a full year of calls; subject address and call nature code captured on computer; multi-year storage and retrieval capacity; fields such as street name, address, floor and apartment number; date and time of calls; and officer's disposition. Sherman's 1989 repeat call study was only able to identify building addresses not apartment numbers, thus limiting the accuracy of address matches and biasing data towards addresses with large numbers of residents. Holt (1995) also encountered problems with data management, which extended the data collection period from the planned six months to 12

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months, because of problems with address matching. Three particular problems included houses identified by names rather than numbers, houses with common numbers that were divided into flats, and houses without a recorded name or number. The result of these data problems was "...a penumbra of uncertainty even about the extent of domestic burglary repeats" (Anderson, Chenery and Pease 1995: 8). Address matching problems are fewer with domestic burglary than with other types of crimes (such as auto theft or commercial robbery) where addresses may not include a number or might use a term such as "in back of." The cities for this study were selected largely because of their purported ability to overcome these data management problems. Two cities claimed to match addresses to the level of apartment number and all the proposed sites reported addressing issues of misspelled street names and similar data problems through sophisticated data management programs.

As a final criterion for site selection, geographically diverse departments were selected to illuminate regional and other city-level differences. Sites selected represented the Southwest (San Diego), the South (Dallas) and the mid-Atlantic (Baltimore) areas of the country.

Research Questions

The broad scope of the research study was challenging but focused upon answering a very specific set of research questions. The predominate research objective was to document the scope and nature of repeat victimization. Within this objective, we sought to establish baseline information about the incidence of victimization and patterns of revictimization in three American cities for residential burglary. This documentation was sought citywide and in selected high crime areas, to identify distinctions and variations in repeat victimization. In

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addition, the baseline research sought to identify the temporal patterns or time course for serial crimes of residential burglary. In other words, we sought to specify the "window of vulnerability" following the occurrence of one crime and before a repeated victimization occurs, presuming that this window provided an opportunity for police to intervene and prevent the subsequent victimization.

In addition to collecting the baseline information about repeat victimization, the study included a very practical focus; indeed, the study was conceptualized as a test of police problem-solving. The intention was that preliminary findings about repeat victimization could be used as a platform to improve police effectiveness related to residential burglaries. Since we had conceptualized an examination of repeat victimization as a problem-solving tool to focus police deployment and crime prevention practices. The broad objective was to reduce repeat victimization, thereby reducing burglary victimization. From a process-oriented perspective, this objective involved examining how findings from this research could improve police effectiveness. By working with police in areas to develop and implement effective interventions, we hoped to identify any special implementation problems for the police in focusing on repeat victimization. At a basic level, this included a process evaluation to determine whether information and knowledge of repeat victimization provided a useful conceptual framework guiding police to develop and implement effective interventions.

Several other research objectives were embedded within the baseline research. The study also sought to examine factors affecting revictimization. In areas with high burglary rates, what factors have predictive value for revictimization? For example, individual-level factors such as victim characteristics that include gender, race or age; modus operandi factors such as means of

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entry or tools used; housing characteristics such as dwelling type; theft characteristics such as value or type of property stolen. The study was also concerned with displacement of crime, given the popularity of the view that displacement is often an unintended consequence related to criminal justice interventions. Does addressing revictimization by preventing subsequent offenses have a neighborhood-level effect on crime rates? Are there displacement effects to other areas? As a related issue, we were also concerned with possible diffusion benefits, such that positive unintended consequences accrued to others in the experimental areas in each city. Do problem-solving efforts focused on burglary victims offer benefits to victims of other crimes or to other areas? If so, how long-lasting are any effects?

Research Sites

Consistent with the research design, three diverse sites participated in the study: Baltimore, Dallas, and San Diego. This section of the report provides a basic description of each site, a description of the developmental process in which analytical findings were reviewed and a treatment developed, and a brief discussion of implementation issues emerging in each city. Several elements were consistent between sites. In each experimental area, an on-site coordinator managed data collection and monitored implementation of the treatment. The coordinator served variably as a resource, coach, facilitator, and identified implementation problems. The coordinator was responsible for monitoring departmental conditions which impacted the treatment (such as personnel transfers or promotions), ensuring training was delivered to new personnel, and carried out other administrative tasks related to both data collection and implementation.

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In each site, a development team was tapped to design the treatment to be implemented. This team functioned as a problem-solving group, and police personnel represented functional areas with a role, or potential role, in responding to burglaries. Teams typically included patrol officers, investigators, crime prevention personnel, crime analysts and supervisors. In San Diego, civilian volunteers were included. Efforts were made to avoid being management heavy, but rather focused on involving personnel with line responsibility for burglaries.

Description of Baltimore

The 83.6 square miles of Baltimore are home to a population of three-quarters of a million (736,014). The city is dominated by an African American population of 435,619 or 60%, while the white population constitutes 30%. The remaining population includes Asian, Hispanic, and Native Americans.

The city is policed by the Baltimore Police Department, an agency some 3,100 sworn officers. Geographically, the city of Baltimore is divided into nine decentralized police districts. Each district consists of three to four sectors, and four to six posts per sector. Each district operates under the command of a major who manages four functional areas: motorized patrol, neighborhood operations, headquarters and services, and drug enforcement/vice enforcement.

Crime in the city has declined in recent years. The city experienced 15,772 reported residential burglaries in 1996; by 1997, the number had dropped to 8,642. Consistent with its housing stock, most of the burglaries in Baltimore occur in single-family dwellings. About 80% of 1996 burglaries were in single-family dwellings; in 1997, about 83% occurred in single-family dwellings.

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An experimental and a comparison area were selected for the study in Baltimore. The experimental area consisted of three patrol sectors in Southern District; the comparison area was a similar area in Southeastern District, located east of the Southern District. The Southern and Southeastern Districts are quite similar in population and land size, environment, housing stock and socioeconomic status of residents. The Southern District has approximately 25,986 households and 69,000 residents -- approximately 9% of the city's population. Its geographic area is approximately 12.8 square miles.

The Southeastern District has 28,500 households with a population of 70,000 – approximately 10% of the city's population in 9.3 square miles. This district is diverse and includes businesses, industrial areas, and institutions; residential housing, ranging from public housing developments to luxury housing; and numerous licensed liquor establishments in a historic area.

The housing stock in both districts consists predominantly of row houses and some apartment buildings. Both districts are ethnically diverse, although predominantly white and African American. Many of the neighborhoods in the Southern District resemble those in Southeastern. In Southern District, Cherry Hill, Westport and Morrell Park are quite similar to O'Donnell Heights and Patterson Park in Southeastern. Similarly, in the Southern District, Union Square, Carrollton Ridge, Ridgely Delight and Federal Hill resemble Bayview and Dundalk neighborhoods in Southeastern District.

Developmental Process in Baltimore

Developing a response to residential burglary in Baltimore necessitated an examination of the department's current practices for handling burglaries. The Baltimore Police Department

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required that a patrol officer respond to all residential burglary calls at the location of the offense. The officer was to complete an offense and supplement report, issues a Victim Assistance/Incident information Form (309) with the complaint number, and conduct a canvass of the neighboring houses for eye witnesses. There were indications that the latter activity was often neglected while the incident and complaint number were recorded on the officer's daily activity sheet.

Routinely, all offense reports were copied and forwarded to the Major Crimes Unit (MCU), the investigative unit located in each police district. To carry out a follow-up investigation, detectives in MCU contacted the victim by telephone or in person. The complaint remained unsolved or not cleared if there were no leads; the complaint was closed or cleared once an arrest was made. Otherwise, burglary reports were suspended if no further information was available. Cases are cleared if an arrest is made for the offense. Some cases were cleared through exception, as in when the victim refused to prosecute such as a friend or relative, or the offense was admitted to by an offender, perhaps apprehended and charged for another crime. The case is categorized as unfounded if determined to be a false report, or no burglary took place.

The Experimental Treatment in Baltimore

Each site in the study developed its own unique response to burglaries in the experimental area. The response was developed based upon preliminary findings about burglary victimization in the area. In Baltimore, preliminary findings indicated that a burglary victim in the area had a 1 in 3 chance of being revictimized within a year. Thirteen percent of the revictimizations occurred within 1 week of the initial burglary, 28% within a month, and 48%

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within 3 months. Based on this information and police knowledge of burglaries, in late 1997, police personnel in the Southern District designed a response to residential burglaries which consisted of several elements. Police sought to educate and empower the victims of burglaries and their neighbors by distributing "warning" cards to victims and "alert" cards to neighbors. (See following page.) Each card contained prevention tips and advice, and offers of assistance in securing the point of break-in. To protect victims, police offered free security checks and provided free property registration service.

As a second element of the treatment, police sought to increase formal and informal surveillance of burgled dwellings by increasing vigilance and patrol presence in the area. Police alerted neighbors that a burglary had occurred in their neighborhood, warning neighbors to protect their property and be aware of strangers in or around the neighborhood. Police also carried out premise checks – that is, increased patrols of burgled dwellings -- based on weekly burglary lists and daily roll call announcements.

In addition to issuing 309s and complaint numbers, responding patrol officers were required to hand out a bright yellow warning card to the victim. The warning card included advice to the victim about the likelihood of revictimization and provided burglary prevention tips. Victims were also offered a discount at a local home improvement store for purchasing materials for securing their premises. During a neighborhood canvass, the patrol officer was also required to distribute "blue" alert cards to neighbors. The blue card advised neighbors about a burglary in the neighborhood and how to protect properties and prevent subsequent burglaries. The objective of this notification was twofold -- the neighbor would take measures to harden

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targets by securing their property and the neighbors would increase their vigilance in watching for suspects.

[Baltimore Victim Card—Front Side]

Now that you have been the victim of a BURGLARY...

♦

...there is a 1 in 3 chance you will be a victim again—Soon!!

♦

YOU CAN PROTECT YOURSELF

by following the burglary prevention checklist on the other side of this card.

Courtesy Baltimore Police Department Southern District
{B.P.D. badge]

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DON'T BE AN EASY TARGET!

- Secure the spot where the burglar broke in as soon as possible.*
- Lock your doors and windows when you're not at home. Don't forget second story windows!
- Call the police if you see suspicious people in your neighborhood.
- Don't leave strangers alone in any room, at any time.
- Keep cash and jewelry out of sight from windows and doors.
- Install strong locks on doors and windows.*
- Get a free Police Department home security survey - call 410-354-5169.

***The Loading Dock*, a non-profit company, offers reduced price building materials. Become a member by calling 410-728-3626. (This card must accompany first visit.)**

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The Major Crimes Unit (MCU) was also responsible for determining whether victim wants his or her remaining valuables registered by BCPD. Then, the officers of the Special Operations Unit visited the victim and registered up to five pieces of property that may be vulnerable in a subsequent burglary. MCU generated a weekly list by post and distributed the list to each patrol lieutenant and post sergeant who then forwarded the information to patrol officers. The repeat offenses on the list were marked by an asterisk and announced during roll call. As available, patrol officers then conducted premise checks of the burgled properties by using visual checks. Additionally, patrol officers recorded the checked properties on their daily activity sheets. The burglary list consisted of four weeks worth of burglaries, updated each week.

In December 1997 all patrol officers and detectives involved in the project were trained, to provide consistent and uniform information about the project and the elements of the response. The experiment began January 1 in Southern District.

Numerous implementation challenges occurred during the project. MCU detectives and Special Operations Unit Flex officers were detailed outside the district due to an increase in homicides in March 1998. This detail caused a delay in follow-up investigations and property registrations. Although the special detail ended, MCU detectives and Special Ops continued to lag with property registrations. Patrol officers often neglected to note the distribution of warning/alert cards and canvassing on offense reports and failed to record or to conduct the premise checks of burglarized addresses. To reinforce delivery of the treatment, the lieutenant coordinating the project sent a memorandum to all patrol lieutenants. In addition, officers participating in the project received recognition through a notice on the project bulletin board. Project staff increased ride-alongs with patrol officers to raise awareness of the burglary project.

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Description of Dallas

Dallas is the eighth largest city in the nation, with slightly over 1.1 million residents in a 330.2 square mile area. The population is diverse, consisting of 55 percent Caucasian, 30 percent African-American, 21 percent Hispanic and 15% of other ethnic origin including American Indians, Eskimos and Asians. The housing stock for the city is comprised of approximately equal numbers of single family (48.1%) and multi-family (49.7%) units with an 86 percent occupancy rate.

The Dallas Police Department has approximately 2,842 sworn officers and handles more than 1 million calls for service annually. Uniformed officers responded to about two-thirds of these calls for service. The remainder of the citizen-generated calls were handled by telephone, referred to the Division substations for resolution or disregarded without police intervention. In 1997, Dallas police officers investigated 100,612 Part I and part II index crimes and cleared 23.8% of these offenses.

Dallas is divided into six patrol divisions varying in area and population. The smallest division, 13.8 square miles, includes the downtown business district and has a population of approximately 233,800 persons. The largest division, includes 92 square miles of primarily residential neighborhoods and a population of 204,500 persons. The divisions are subdivided into sectors, which include four to eight beats. Beat boundaries are based upon calls for service in the preceding year. Each of the decentralized patrol divisions is commanded by a deputy chief, and includes patrol, investigations, covert operations, crime prevention, and community policing functions.

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Patrol officers assigned to beats within the division dominate staffing. The activities of these officers include responding to calls, traffic enforcement, accident investigation, crime prevention activities, and community service activities. Each of the patrol divisions has an investigative unit responsible for follow-up investigation of property crimes, including commercial and residential burglaries. The remaining units within each division provide support. The Deployment Unit conducts covert operations and works with the crime analyst to identify and respond to offense trends. The Crime Prevention Unit works with the community to establish and maintain crime prevention measures, including conducting security checks for residences and businesses, establishing neighborhood crime watch units, and educating groups regarding a variety of crime issues. The Interactive Community Policing (ICP) Unit works within the community addressing specific problems ranging from code enforcement to routine patrol activities.

There were 12,474 burglary reports in 1997 in Dallas. These offenses were handled by division officers or civilian phone clerks, assigned to the Communications Division. The sworn officers conducted the initial investigations at offense locations, identified and protected physical evidence for collection by civilian physical evidence technicians, and prepared reports for assignment to the appropriate investigative units.

The experimental area for this study was in the Northeast Operations Division. This division is approximately 47 square miles in size with a population of 233,800 persons. The experimental area was 12 square miles comprised of approximately 70 percent multi-family housing and 29 percent single family residences. The ethnic composition of the 54,652 population in the area is 68 percent white, 20 percent African American and 5 percent Hispanic.

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The matched comparison area included quite similar housing stock and a similar number of residential burglaries as the experimental area. Housing in the 28 square mile comparison area, also a mixture of apartment and single family residences, is 65 percent multi-family housing and 35 percent single family residences. The population of 45,520 is 36 percent white, 14 percent African American and 44 percent Hispanic.

Developmental Process in Dallas

The housing stock in Dallas is quite different than in San Diego and Baltimore. Single family houses in Dallas are characteristically freestanding structures built upon land parcels of varying sizes and shapes. Multi-family housing consists of large apartment communities, made up of numerous individual buildings of four or more apartment units. Many of these communities have 200 or more individual apartment units each. Indeed, some of the apartment complexes have up to 1,000 or more apartment units. Many of the apartment complexes are situated adjacent to each other, creating large areas comprised entirely of apartments numbering in the thousands. Officers have described these areas as a "smorgasbord" for burglars.

There were 1,527 residential burglary offenses in the experimental area from 1994 through 1996. Of that total, 814 were reported during 1995, the year selected as the baseline for this study. There were 465 reported offenses at 206 repeat addresses for the years 1994 through 1996; 331 of the repeat burglaries (41% of the total number) occurred during 1995. In 1997, 453 residential burglary offenses were reported.

Because of the characteristics of the housing stock in the experimental area, repeat offense characteristics are unique. It appeared that burglars did not regularly return to an individual apartment to commit a second offense but did return to the same building within an

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apartment complex to commit additional offenses. This phenomenon resulted in a "virtual" repeat offense in which an identical apartment unit within an apartment building is burgled. While the occupant of the residence is different, the physical layout and environmental characteristics of the apartments are identical, and the properties stolen appear to be quite similar as well, likely because persons of similar socioeconomic status occupy apartment buildings.

In Dallas as in Baltimore, an examination of police practices in response to residential burglaries was carried out. When a burglary victim calls 911 to report an offense in Dallas, either a civilian telephone clerk or uniformed sworn officer handles the offense and prepares the offense report. A large portion of burglary reports are taken by telephone. The physical evidence section (PES) in the police department is notified of the offense and responds to the offense location to collect physical evidence, primarily in the form of fingerprints. The completed report is assigned to a detective in the patrol division for further investigation. Within 24-48 hours of receipt of the offense report, investigators make contact with the victim to obtain additional information regarding the offense. Contact is usually made by telephone.

Following preliminary analysis of repeat burglaries in an area of Dallas, a development team, comprised of police officers from the Northeast Operations Division, was formed. The team had responsibility for developing a problem-solving response to be implemented by Oct. 1, 1997. During the development phase, training was developed for patrol officers, detectives, crime prevention officers and Interactive Community Policing (ICP) officers. With the cooperation of the ranking officers within each unit as well as the media production unit of the Dallas Police Department, a video-based training program was developed and carried out.

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Within the community, the site coordinator met with apartment managers and local neighborhood organizations. These meetings provided information regarding the characteristics of repeat offenses, the prevalence within the division (particularly the target area) and a general overview of the treatment phase of the project.

Experimental Treatment in Dallas

The experimental treatment in Dallas was a multifaceted effort by officers from the uniformed patrol, investigations, crime prevention, covert operations, communications, and the physical evidence section. This treatment combined community awareness and crime prevention with a proactive approach. This approach provided written notification, placed on residences adjacent to burglarized dwellings, to increase citizen awareness of recent incidents of crimes. Apartment managers were notified of the offenses and the likelihood of repeat offenses, and an increased interaction between residents and local police was encouraged. While the treatment focused primarily on apartment communities because of the dominance of offenses reported from these communities, offenses in single-family residences were also addressed. The focus of the treatment was to increase awareness of the offenses among police and residents.

As residential burglaries occurred and burglary reports were received in the patrol division, residents in the immediate vicinity of the burglary -- those residences which were adjacent to the burglarized dwelling -- were informed of the offense through an informative door hangers. The door hangers were placed on the surrounding residences by the crime prevention officer to inform residents of the offense, the increased probability of the offender returning to that offense location in the near future, to encourage residents (and apartment staff as appropriate) to be alert and report suspicious or criminal activity by calling 911 and report the

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activity. Generally, these hangers were placed within 24 to 48 hours after the time the report was made to the police.

If the burglary occurred in an apartment, the apartment manager was also notified of the offense and the probability of a repeat offense. Each apartment manager was advised to notify the staff of the offenses and be especially aware of suspicious activity within the complex As offense trends within apartment communities emerged, officers from the Crime Prevention Unit and ICP Unit met with the complex managers to discuss the burglaries and possible responses.

A key element of the response was that a home security survey was offered to each burglary victim. About half of the victims (47%) participated in the security assessment in which the crime prevention officer provided written information about ways to increase the security of the residence and protect personal property. Where burglaries occurred within apartment communities, environmental factors that may have contributed to the offense were identified and the apartment staff was advised of these factors and the need to correct each problem.

Following each offense, a letter from the deputy chief of the Operations Division was sent to the apartment complex managers, owners and management companies responsible for each property. These letters warned of the probability of repeat offenses and encouraged their participation in taking steps to reduce burglaries, reminding owners of their responsibilities in providing a safe environment and highlighting the advantages such as increased occupancy, reduced liability and a safe working environment for staff. Owners of single-family residences also received letters that described the likelihood of a repeat offense, offered a security survey

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and provided general information regarding ways to improve home security -- the same services that were offered to residents of the apartment communities.

Although a specific role for patrol officers was not developed as part of the experimental project, patrol officers were asked to conduct directed patrols as time was available at properties which had been burglarized. Patrol officers were provided weekly reports prepared by the crime analyst assigned to the division. These reports included maps indicating offense locations within the division. In addition, detailed information describing developing crime trends relevant to this study were provided to the patrol officers, investigators, ICP officers and the covert operations officers. The information identified the offense locations, time of offenses, entry method and property stolen during the commission of each offense as well as suspect information, if available.

The experimental treatment in Dallas relied heavily upon an increased awareness of the offenses by police and the public. Residents of multi-family dwellings received the bulk of the treatment. Some apartment managers were concerned that the door hangers would increase the fear of the residents. Some managers appeared to ignore the recommendations and indeed, these apartment communities appeared to be more susceptible to offenses. The reluctant managers did not particularly hinder the response of the crime prevention officer which involved delivering services directly to the victim. Some managers cooperated only minimally and generally following strong urging by the crime prevention officer. When cooperation occurred, some effects were substantial. For example, a trend in burglaries was identified in a specific apartment community on a major thoroughfare in the experimental area. This large complex of nearly 500 apartment units included multiple addresses and accounted for a large number of

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offenses. The apartment staff was provided with information about the offenses and the results of a security assessment survey conducted within the complex. During the first two months of the project, there were nine offenses in the development. The manager established a crime watch, and carried out recommended repairs in the complex. During the subsequent 10 months, only 10 offenses were reported.

Description of San Diego

San Diego is an area of 332 square mile area that is home to a diverse population of more than 1.2 million persons, of whom 59 percent are Anglo, 21 percent Hispanic, 11 percent Asian, and 9 percent African-American. There are 406,000 households in the city, 56% are single family and 42% multi-family. Fifty-two percent of the residences are rental properties, the remaining 48% owner occupied.

The San Diego Police Department has 2,050 sworn personnel, and 700 civilian personnel organized into functional areas under seven assistant chiefs. Key elements of the department's strong emphasis on community policing include a Neighborhood Policing Support Team (NPST), a team developed to facilitate the department-wide implementation of the goals related to neighborhood policing and problem solving. The department's Community Service Officers (CSOs) also assist with police service. CSOs are non-sworn personnel within the Police Department. CSOs which serve several different functions, including taking reports which do not require follow-up. CSOs are also commonly assigned to storefronts, where they act as a liaison with the community. Another element of the department's outreach is the Retired Senior Volunteer Patrol (RSVP), part of the department's extensive Volunteers in Policing program. RSVP consists of volunteers aged 55 and older who assist police with monitoring

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neighborhoods, and speaking on safety to schools and senior groups. RSVP members are equipped with vehicles and police radios to assist police officers, and to access police officers as necessary.

Field operations includes patrol personnel assigned to eight geographic area commands, each managed by a Captain. Each area command is divided into two to four service areas, supervised by a lieutenant. Service area boundaries are consistent with boundaries of identified neighborhoods across the city of San Diego. For each service area, there is a generalist detective sergeant, generalist investigators, and several patrol sergeants and their patrol officers. While most investigative functions are decentralized, there are some centralized investigative units such as homicide, sex crimes, gangs and narcotics.

Developmental Process in San Diego

Crime is somewhat concentrated in the city of San Diego -- two police divisions contained most of the burglaries in the city. Western Division was chosen as an experimental area and Mid-City Division was chosen as a comparison area, as the two divisions had a similar number of burglaries and comparable housing stock. Geographically, Western Division is large -- approximately 26 square miles with an estimated population of 173,835 in 1998. The ethnic composition of the area is quite diverse, consisting of 66 percent white, 19% Hispanic, 6 percent black, and 8 percent Asian/other.

A development team in the division was organized to come up with a response to residential burglaries, based upon preliminary findings about repeat victimization. The team consisted of the division captain, a lieutenant, a detective sergeant, two patrol sergeants, a sergeant from Neighborhood Policing, a detective, a patrol officer, a crime prevention officer, a

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community service officer (CSO), two Retired Senior Volunteer Patrol officers (RSVP), and the crime analyst assigned to the division. Among the preliminary findings were concerns about the quality of the preliminary investigations in the division. An emphasis on better preliminary investigations was included as part of the response to burglaries in the division.

Experimental Treatment in San Diego

In Western Division, officers were dispatched to the residence to conduct a preliminary investigation when a residential burglary takes place. The officer may be a patrol officer or a CSO assigned to patrol. In addition to taking a report – the preliminary investigation, the responding officer canvasses the neighborhood for witnesses and processes the scene including taking fingerprints. If there is a large amount of evidence to be collected, an agent or evidence technician is called to the scene to assist.

As part of the experimental project, an Investigation Addendum was included in the officer's report to prompt officers regarding the collection of latent prints, other evidence collection and neighborhood canvassing. The responding officer informed the victim of their chance of being burgled again within a short period of time.

Following completion of the incident report, a copy of the report was provided to the Community Relations Officer (CRO) or CSO for the respective service areas within the division. The CRO/CSO then telephoned the victim, asking a series of questions, including "Have you been burglarized at this address within the last 12 months?" and "Did you report the previous burglary to the police?" During the phone call, a home security assessment was offered to the victim. As requested, CRO/CSO personnel carried out the security check at the residence,

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examining the interior and exterior of the residence and providing security advice. These procedures were carried out within a week of the offense.

The burglary report was also provided to the RSVP for Western Division. Along with a copy of the burglary report, the RSVP received six copies of a crime prevention/home security brochure titled "Home Safe Home" for delivery to the victim and adjacent residences. Attached to the front of each brochure was a notification sheet providing information about the date and approximate time of the burglary, the hundred block and street name where the burglary took place, the case number, if the suspect entered through a window, and the names and phone numbers of two Western Division detectives for the recipients to call if they have questions and/or information regarding the crime. The brochures include such information as tips on interior and exterior lighting, gates and fences, landscaping, doors and doorknobs, locks, windows, garage security; and alarms. If a burglarized address is an address which has been previously burglarized, a detective visited the residence to evaluate for environmental changes that may be taken to prevent further offenses from occurring.

To raise general awareness of residential burglaries among police, biweekly reports of offenses were prepared for supervisors and officers in the Division. This report included date, time, address, property taken, and any modus operandi information or suspect information as available. Spot maps in the division's line-up (roll call) room were used to inform officers where burglaries were occurring as a method to raise general awareness of burglary problem areas.

RSVP visits were logged into a database to monitor that the crime prevention pamphlets were being delivered. The RSVP log included the address where the pamphlet was delivered

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and the date. The same information was maintained regarding contact made by the CRO/CSO's. This database included any contact with the victim made by the CRO/CSO, date of contact, completion of a Home Security Check and the date. At line-up, patrol officers were regularly informed of any identifiable burglary series within the division, and project staff conducted ride-alongs to increase communication with patrol.

All training for the project was conducted at the beginning of the experimental phase. The division captain, commander for the patrol area, attended all patrol line-ups, explaining the project's purpose and clarifying his expectations of them regarding the project. The captain also made the same presentation at all line-ups for investigators.

In addition, all patrol officers received line-up training from the top two burglary detectives in the division. One detective gave the officers extensive training on information they should include in their report along with the reasoning behind including that information in their report, elaborating how the information could assist with the follow-up investigation. Another detective spoke at the line-up training to give the officers additional information. A transcript of this training was made available to officers.

The RSVPs were trained regarding their duties in the intensive academy that they must complete before they can begin work. This training was augmented with project-specific training prior to the experimental phase of the project. The training included a discussion of the project, its purpose, the importance of the RSVP role, and guidance and on where to place brochures if the resident was not home. RSVPs were contacted on a weekly basis, to ensure smooth delivery of the brochures. CROs and CSOs were also trained prior to the experimental phase of the project. This training including a discussion of the purpose of the project, the

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process for carrying out home security checks, and how to complete the home security questionnaire.

Two practical challenges emerged during implementation of the project. In the beginning of the project, three detective sergeants were to give the project staff with a copy of each residential burglary report on a daily basis. This proved to be problematic, as the detective sergeants were not consistent in providing these reports. For example, on days-off or other occasions, reports were not available. Consequently, patrol officers were asked to put each residential burglary report in a bin marked for that purpose in the report room, next to all of the other report bins. Notices were read at line-up instructing officers to do this, and sergeants were asked to remind officers occasionally. One of the lieutenants wrote a memorandum to each sergeant to remind their officers to do this. Regardless of the numerous reminders, burglary reports were not routinely available in a timely manner. The delay on reports at times resulted in a delay in which victims and their neighbors received the treatment.

Changes in police personnel during the project period also presented a challenge to implementation. The division captain was transferred after the project began. While the acting and subsequent captains were supportive of the project, some momentum was lost with personnel changes.

As in Dallas, officers in San Diego had some skepticism about the extent of repeat victimization. Through follow-up investigations, detectives learned that many of the repeat burglaries were "doubtful" burglaries, or the suspect was someone who lived within the residence. Police characterized "doubtful" burglaries are those where there was no crime -- the

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reporting party may be lonely or mentally ill, or the person was making a claim for insurance purposes months after the supposed crime took place.

Treatment and Implementation Summary: Three Cities

The experimental treatment in each city was developed by a team of police personnel based on a preliminary examination of repeat victimization in the experimental area. The results of this examination were intended to inform the problem-solving process, by providing police practitioners with insight into the nature of repeat victimization of residential burglary. These preliminary findings were augmented by input from a range of police practitioners -- from investigators to crime analysts, from patrol officers to civilian volunteers. Members of the team participated in brainstorming sessions in which they were urged to put forth hypotheses about burglaries in the areas -- hypotheses which could be elaborated by further data collection, or, if validated, incorporated into the response package. Concerns about the adequacy of preliminary investigations emerged in each site during this stage of the developmental process.

The initial examination of repeat victimization in the experimental area was rudimentary, as the analysis revealed substantial data problems which had to be addressed before valid findings about repeat victimization could be fully developed. These data problems, discussed subsequently, included issues of definition, selection of relevant time frame,

In addition, the selection of geographic areas for the experimental treatment was driven by the need for minimum numbers of burglaries to permit detecting the statistical effect of any reduction in burglary. This minimum number requirement resulted in the selection of larger geographical areas than might ordinarily be sought for problem-solving. These larger

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geographic areas tended to have greater variation in housing stock, economic and environmental conditions making patterns or trends in burglaries -- and appropriate interventions -- more difficult to identify. For example, in Baltimore, burglarized properties ranged from high-end condominiums owned by professionals to delapidated row houses where one impoverished burglary victim secured the point of break-in to her dwelling by covering broken window panes with plastic wrap -- hardly an effective technique to deter any subsequent burglaries! The wide range of victim characteristics underscored the difficulty in developing an experimental treatment appropriate for administration to all victims.

In addition to the preliminary information about repeat victimization, development teams were provided with summary information about burglaries including type and value of property taken; temporal analysis including day of week and time of day of offenses; victim characteristics such as ethnicity, age and gender; location analysis including an assessment of proximity to schools, drug treatment facilities or other possible contributors to burglaries; and modus operandi information, including point and method of entry. In general, this information was not particularly illuminating -- largely due to the variation between burglaries over the large geographic area.

Development teams were also provided with detailed and descriptive information about crime prevention techniques which had been used successfully in other venues. Since no additional financial resources were made available to the police agencies, most crime prevention techniques requiring purchases were dismissed as possible options.

As developmental teams in each city worked to develop a treatment for burglary victims, three primary goals emerged:

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The need to conduct better preliminary investigations—urging officers to include more detail in their reports, examine scenes for possible evidence, and ensure they conduct neighborhood canvases;

Making police officers, victims, and neighbors aware of the victims' increased vulnerability after a burglary; and,

Providing more direct target hardening and crime prevention advice and/or services to victims of residential burglaries.

Each of the three cities approached these goals in slightly different ways because of the variations in burglaries, housing stock, and police policies, procedures and resources and other factors. From the outset of the research study, the design of the experimental treatment was conceptualized as something to be left to the interests and desires of the local police team. Although teams were provided with information and encouraged to adopt multi-faceted and assertive crime prevention strategies, the treatment package adopted in each city can best be described as weak. Nonetheless, police felt that the approach would affect repeat victimization and have an overall effect of reducing the aggregate number of burglaries in the area.

Citywide Data Analysis and Data Difficulties

The research project commenced with an analysis of repeat victimization residential burglaries in the experimental area for each city. These datasets were smaller and more manageable than city-wide data -- and the analytical process was illuminating for it pointed to some of the inherent difficulties in reliably specifying the incidence of repeat victimization using offense data.

Upon preliminary examination, we learned that unique address information to the apartment unit level was not available in each city. Project staff had originally planned to match

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residential burglary cases down to the apartment unit number address -- the unique address at which a single family or individual lives. Accurate information was simply not available at this unit of analysis. For example, Baltimore does not capture apartment number in its data base, let alone keep it in a separate field. Dallas was not able to provide apartment numbers for 1996 data; and even when apartment numbers are included, building numbers are absent -- an important address feature for large apartment complexes that share a single street address. San Diego did provide a separate field for the apartment number for both years. However, in nearly 55% of the addresses that should have included an apartment number, that field was left blank. There may be several reasons for this—the reporting officer failed to include it on the report, the data entry clerk failed to enter it, or the offense occurred at a place in the building that did not have an apartment number (for example, a laundry room or storage area).

Recognizing the flaws of multi-family address information for purposes of identifying unique repeat addresses, the premise code for each burglary was requested so analysis could be carried out separately for single- and multi-family dwellings. We determined that this division of residence type would provide quite accurate information about repeat victimization in single-family dwellings, while the phenomenon in multi-family would be somewhat inflated. The distinctions however would nonetheless be quite informative. Indeed, the differences between housing type and repeat victimization is discussed at length in the subsequent chapter.

Citywide offense data from each city for 1996 and 1997 was collected and analyzed to establish the baseline incidence of repeat victimization for residential burglary. Consistent with Anderson, Chenery and Pease study (1995: 10), research must "determine the approximate extent and time course of repeat victimization" by analyzing the frequency of address recurrence in

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residential burglary reports. As with the British and Canadian studies, the address-matching task was undertaken to reveal the extent to which multiple victimization existed within each city, their distribution relative to all reported burglaries, and the time frame during which repeats typically occurred.

Consistent with Tilley (1995) and Sherman (1989, 153), a full year of data from reported offenses was analyzed. A key issue in defining "repeat victimization" was specifying the relevant time period in which the repeat, or second offense, must have occurred in order to exclude events that were effectively independent. In this study, initial data analysis efforts involved using a rolling year consistent with Pease:

> The period should be a rolling year, not a calendar year. Victimisations [sic] during the previous twelve months count, not from January 1st (otherwise two events on Dec. 31st and Jan 1st would not be linked, and counts of repeats would rise spuriously as the calendar year progressed) (Pease 1995, 2).

During the analysis, the use of the "rolling year" method was suspended. Since a primary objective of the study was to develop a analytical model for police to analyze repeat victimization, the rolling year created an analytical challenge by necessitating three full years of data to establish baseline incidence of repeat victimization for a single year. We elected to simplify the analysis and establish a conservative definition of repeat victimization by examining only incidents occurring within a single calendar year. While this definition substantially undercounts true repeat victimization -- and the extent of this undercount varies from one jurisdiction to another depending upon the time course between initial and subsequent victimizations -- the method provides a standard, easily replicated guideline to police for identifying repeat victimization.

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To carry out the repeat victimization analysis in this study, spreadsheet files (dBase and Microsoft Excel) were collected containing reported residential burglary cases for the years 1996 and 1997 for each city. At a minimum, each file was to contain a separate field for police case number, street number, street name, street direction, apartment number, offense date, beat or other police reporting area, premises type (single family or multi-family), and case disposition (cleared through arrest/exceptional, etc). The raw data sets for each city included:

- Baltimore—6,684 cases in 1996 and 8,862 cases in 1997;
- Dallas—16,417 cases in 1996 and 11,712 in 1997; and,
- San Diego—4,981 cases in 1996 and 4,852 in 1997.

Data received from Baltimore contained the following codes eligible for consideration as a residential burglary were: 01, apartment/occupied; 02, apartment/vacant; 24, club house/fraternity; 32, garage/private property; 37, hotel; 38, housing project/inside; 58, dwelling private/occupied; 59, dwelling private/vacant; and 83, apartment hallway. Burglaries coded 01, 02, 24, 37, 38, and 83 were considered to be at multi-family locations, and all were recoded to a 1 for our analysis. Those coded 32, 58, and 59 were considered to be a single family locations and all were recoded to 5.

Dallas burglary cases received the following premise codes: 501/506, single family residences/garages; 502, duplex homes; 503, apartments; and, 504, mobile homes. Cases coded as 501/506 and 504 were considered to be single family locations and recoded. Cases coded as 502 and 503 were considered to be multi-family locations and recoded.

The data from San Diego contained the following premise codes: 1, apartment/condo; 2, duplex/townhouse; 3, hotel/motel; 4, houseboat; 5, single detached; 6, trailer; and, 7, other. All

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cases coded 1, 2, or 3 were considered to be multi-family locations and recoded to 1. Cases coded as 4, 5, or 6 were considered to be single family locations and recoded as 5. Cases coded as 7 (other) were left as a 7.

Offense data were collected for residential burglaries reported to the police for the calendar year 1996 and 1997. Each year's data was analyzed separately. Any burglary occurring at an address previously burgled during the calendar year of 1996 was considered a repeat burglary. The burglaries in each city were separated into two groups – those occurring at single-family addresses and those occurring at multi-family addresses. In each city, the police database for burglary included a premise type code identifying whether an address was a single-family or multi-family residence.

Data Cleaning Procedures

Consistent with data problems in other studies of repeat victimization, this study also encountered problems with data. In addition to the missing apartment numbers, among these problems were miscoded premises, duplicate police case numbers, and errors in street names.

Premise miscodes. For each city, the burglary cases were matched by address. This revealed many instances where the same addresses received different premise codes. For example, one burglary report at 3954 Bancroft was given a multi-family premise code while another burglary at the same address was coded as a single family. To correct this problem, project staff developed a series of decision rules. A separate data file containing cases with matching street addresses was created for each city. For San Diego, each match was examined to determine the entry in the apartment number field and premise codes for those matches. If any of the matches had an apartment number listed, or even the # symbol, all cases at that address

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were coded as multi-family. For all cities, in cases where there was no apartment number field or if there was no information in the apartment number field, addresses were examined to identify multiple cases. When there were more than two cases at a single address, the dominant code was used to establish the corrected premise code for all addresses.

For example:

Address	Apt.	Premise code
123 Park Ave.		1
123 Park Ave.		5
123 Park Ave.		5

This address was then coded as a single-family location -- premise code 5 in San Diego. If there were only two matches, and no apartment number clue, the second record of the match was coded to correspond to the first record of the match. For example:

Address	Premise code
456 Park Ave.	01
456 Park Ave.	58

For this address, the 58 -- Baltimore single-family code -- was changed to 01 -- Baltimore multi-family. If there were more than two matches and none of the codes matched, all records were changed to correspond to the code of the first record of the match. For example:

Address	Premise code
444 Park Ave.	501
444 Park Ave.	502
444 Park Ave.	504

For this address, both the 502 (Dallas duplex) and the 504 (Dallas mobile home) were changed to a 501 (Dallas single-family).

For the San Diego data, if there was an address match showing two conflicting codes and one was coded as 7 (other), the 7 was changed to the more specific premise code. For example:

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Address	Premise code
667 Park Ave.	7
667 Park Ave.	5

For this address the 7 was changed to a 5. Or the following scenario occurred:

Address	Premise code
998 Park Ave.	1
998 Park Ave.	1
998 Park Ave.	7

For this address the 7 was changed to a 1. Once premise codes were cleaned, data were sorted into single-family and multi-family address databases.

Duplicate police case numbers. Each burglary report taken by the police is assigned a unique police case, or report, number. This number can be used to determine if a single case appears in the database more than once. Data from two of the three cities—Baltimore and Dallas— had burglary cases entered into the data file more than once. For both these cities, the duplicate case numbers were deleted from the file. San Diego has a system check that prevents reports with the same case number from being entered into their system.

Errors in street names. As with all data, there were some obvious data entry errors with the street names. Sometimes the errors were simple misspellings. Other times what appeared to be the same street address was entered in two different ways. For example, 136 Calle Primera also entered as 136 W. Calle Primera, or 10931 Stone Canyon Pl. also entered as 10931 Stone Canyon Rd. These errors were corrected either by contacting the department and getting clarification, or locating the addresses through mapping software and determining which entry was correct.

The data cleaning procedures described were time consuming and occurred in agencies which have fairly sophisticate data systems and management practices. Even in the best case

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scenario, police data has errors and these errors must be corrected through standardized procedures to insure estimations of repeat victimization are made using the most reliable information. Use of uncleaned offense data may result in further underestimating the extent of repeat victimization by missing opportunities to match identical addresses where offenses occurred.

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CHAPTER IV:
HOW MUCH REPEAT VICTIMIZATION EXISTS?

Consistent with the research design, the incidence, concentration and time course for repeat victimization for residential burglary were examined in this study. The 'incidence' of repeat victimization reflects the number of offenses of repeat victimization, ie, offenses which are not one-time occurrences within the specified time frame. To report incidence, one-time offenses are often contrasted to repeat offenses to illustrate the proportion of offenses involved. In this report, the term 'concentration' refers to variation between the incidence of repeat victimization in different places.[1] The term 'time course' reflects the period between the initial victimization and subsequent victimization.

Early in the course of the study, variations and distinctions between cities were identified. These variations included city size, geographic region, ethnic composition, the number and rate of burglaries, and differences in housing stock. Dallas, for example, has a larger proportion of multi-family housing than do Baltimore and Dallas. Since residents of multi-family have higher rates of burglary victimization than do residents of single-family dwellings, differences in housing composition and crime rates contribute to differences in burglary rates between cities. These distinctions within and between cities were sought in the study, to permit analysis of their contribution to differences in repeat victimization (See Table 1). Differences in crime rate, for example, play a role in the incidence of repeat victimization. As discussed subsequently in this chapter, the incidence of repeat victimization are typically higher in areas where crime is higher. As a corollary to this finding, the incidence of repeat victimization is higher in cities where crime

[1] The British studies typically use the term concentration to refer to the number of offenses per victim.

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is higher although the concentration of crime in different places within cities plays a mitigating role in determining the overall incidence of repeat victimization.

Table 1
Characteristics of Study Cities
1997

	Baltimore	Dallas	San Diego
Size (square miles)	92	391	342
Population	736,014	1,151,070	1,110,915
Ethnic Composition			
Hispanic	1.0%	19.4%	20.7%
White	39.1%	58.8%	67.2%
African American	59.2%	27.0%	9.4%
Asian	0.3%	0.5%	0.6%
Other	1.4%	13.8%	22.7%
No. of Housing Units	300,491	509,499	426,360
Housing Types			
% Single Family	65%	54%	58%
% Multifamily	35%	46%	42%
Housing Ownership			
% Owner Occupied	49%	48%	48%
% Rental Occupied	51%	52%	52%
Residential Burglaries			
No. Single Family	8,231	9,243	1,646
No. Multifamily	1,915	6,191	3,339
Total res. burglaries UCR	12,755	17,755	8,159
Burglary Rate	17/1000	15/1000	7/1000
Part I Crimes	77,595	100,624	58,962
Crime Rate	105/1000	87/1000	53/1000

As it turned out, variations in the housing stock in each city played a very important role in the study. Although single-family dwellings are the majority of premise types in each city, study areas for each city were often characterized by multi-family housing, which typically

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features higher rates of residential burglary. Indeed, in the experimental areas for this study -- selected because of high burglary rates -- the absolute number of multi-family dwellings exceeded single-family dwellings. In addition to differences in the quantity of differing housing stock, the typical housing stock in the study areas visually appeared to vary substantially from one city to another. (See Figures 1-3.)

Baltimore, the city with the highest overall proportion of single-family dwellings, features row houses often running an entire block, with a pedestrian or vehicular access point punctuating the end of the rows. Typically, alleyways were located behind the row houses.

Much of the housing in Dallas consisted of large multi-building apartment complexes, with 8-12 units per building and a single street address. In the experimental area, much of the housing was described as built initially for young urban professionals, which deteriorated over time. In San Diego, housing appears of greater variation, including many dwellings which resemble single-family dwellings, but have an additional apartment in the back or side of a building, in a basement or in a garage. Given the high cost of real estate in California, San Diego features in-fill housing, where relatively small apartment buildings may be sandwiched between single-family dwellings.

Figure 1
Typical housing in Baltimore experimental area

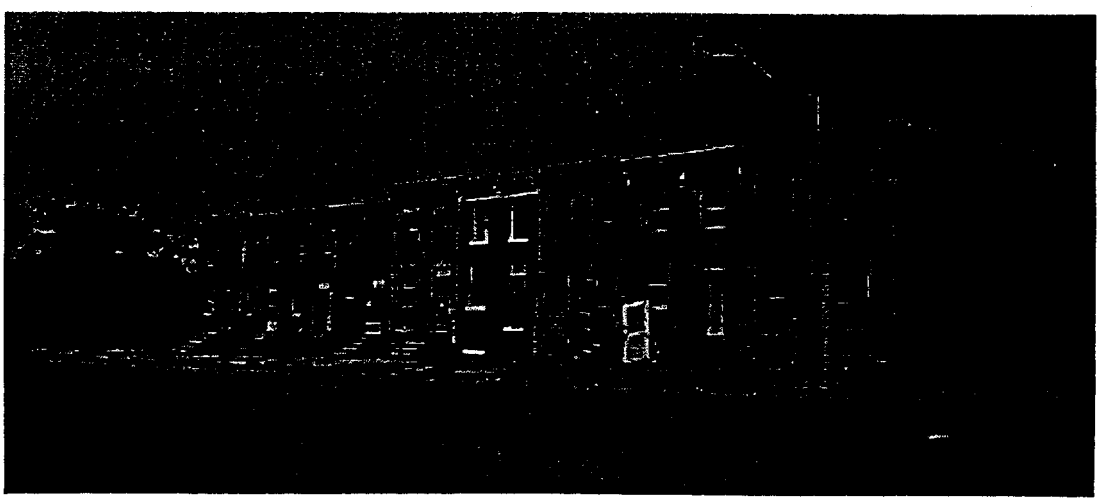

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Figure 2
Typical housing in Dallas experimental area

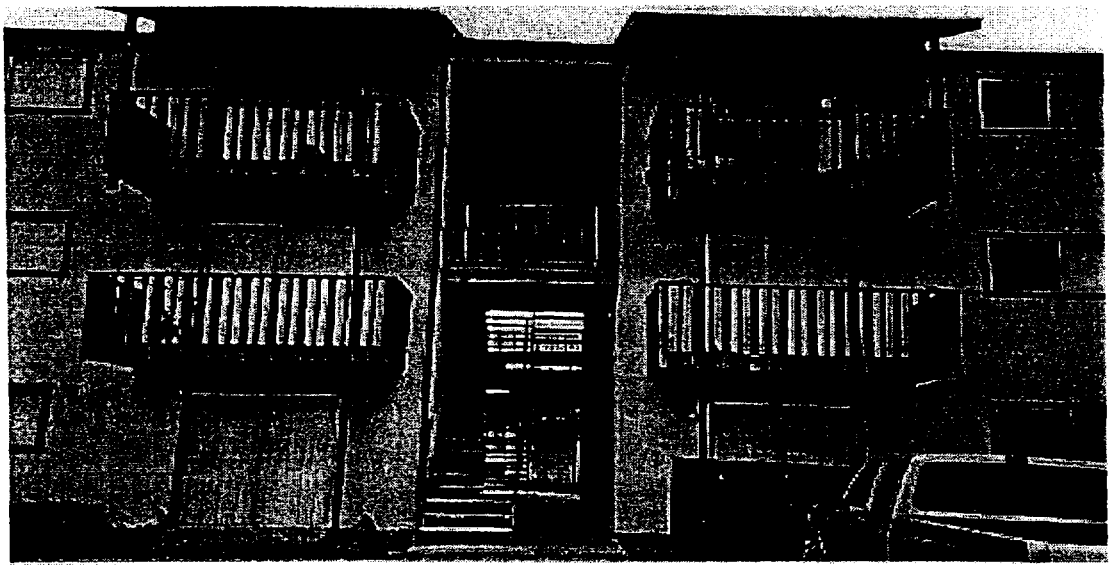
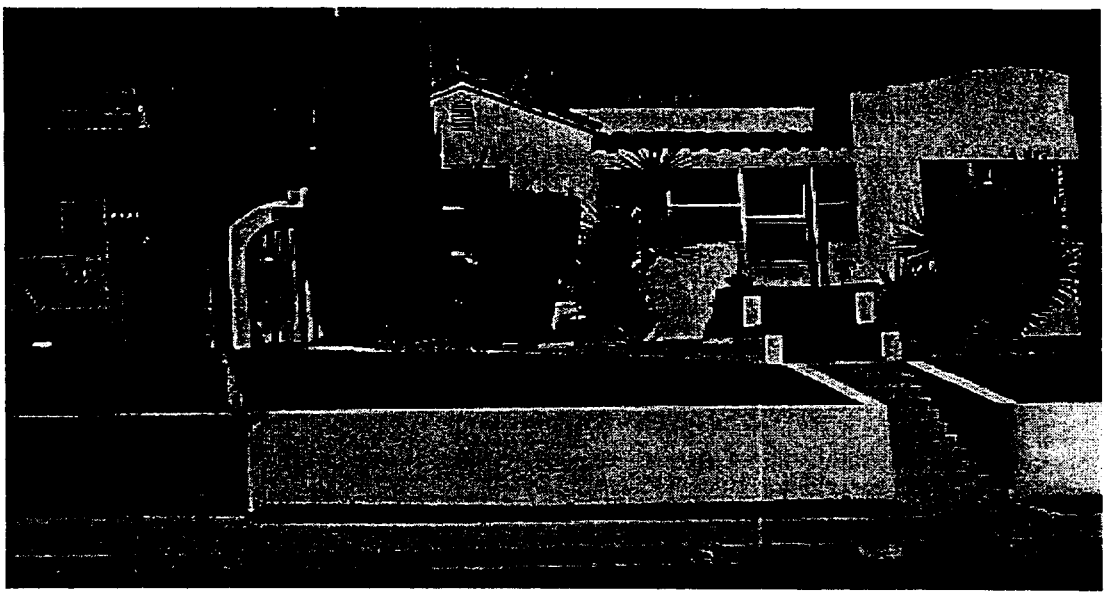


Figure 3
Typical housing in San Diego experimental area



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Data problems: Single Family v. Multi-Family Dwellings

The differences in housing stock between the three cities played a large role in the eventual analysis plan for the study. One criterion of site selection was that offense databases were specified to the level of address -- that is, cities were required to have datasets which included apartment numbers. During the course of data collection and cleaning procedures, project staff discovered that while apartment numbers were often included in offense records, these numbers were not consistently included. More challenging for purposes of analysis was the finding that many apartment complexes feature three distinct numbering schemes -- a street address, a building address and an apartment number. Each of these data elements was not uniformly included in offense records, particularly building address or apartment number (see Data Problems discussed in Chapter III.). While project staff were able to supplement addresses of offenses within the experimental area, there was no method for addressing the gap in data and reliably obtaining unique addresses for apartment units at the city level.

Since the reliability of multi-family addresses for specification of unique addresses was uncertain, all burglary offenses were sorted by premise code. Premise codes are included in offense data for each residential burglary, specifying whether the address was single family, multi-family (apartment or condominium), garage or another type of residential premise. Data were sorted by premise type into multi-family and single-family dwellings. A number of offenses fell out at this point, likely because they were garages at apartment buildings, or other non-dwelling burglaries still captured as residential burglaries. To provide the most reliable estimates of repeat victimization, offense data was analyzed by each of the two dominant premise types with an expectation that findings on single-family dwellings would be more

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reliable than findings for multi-family dwellings. We also believed that the incidence of repeat victimization for single-family would be lower than the incidence of repeat victimization for multi-family dwellings, allowing the practice of bracketing or framing the true incidence of repeat victimization. Since multi-family dwellings are typically burglarized at a higher rate, a higher incidence of repeat victimization seemed likely.

Despite questions about accuracy, multi-family offense data was analyzed using the street-level address as the unit of analysis. This decision rule results in analysis of some offenses which are considered as "near miss repeats"; in a near miss or near-repeat, the second or subsequent offense after the initial burglary may or *may not* have occurred in precisely the same unit in an apartment building -- the unique address typically comprised of one household. Nonetheless, the subsequent offenses appear to *at least* have occurred within the same building at the same address. Indeed, many of the these offenses considered as near-repeats may be *actual* repeats, but there is no way to determine this from the offense data. The conceptualization of a near-repeat is logical as well as practical, as many of the physical characteristics of the offenses at a multi-family building address mirror those of an actual repeat at unique apartment units. For example, apartments within an apartment building typically share many environmental characteristics such as lighting, access, and formal and informal surveillance. Indeed, apartments within a single building typically share similar door materials, lock hardware, window construction, floor plans and may also present similar property attractive for burglars, presuming some economic similarities between tenants within apartment buildings.

Given variations in housing stock between the three cities in the study, the near-repeat method of identifying the incidence of multi-family repeats appears to be more accurate in

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Baltimore and San Diego, in which a street address typically represents fewer housing units. In contrast, the large apartment complexes in Dallas make estimations of the incidence of repeat victimization less informative.

By including the notion of near repeats, we are able to specify the incidence of repeat victimization in single-family dwellings -- estimates which are both conservative and reliable -- and multi-family -- estimates which are less conservative and somewhat less reliable although still informative about the phenomenon.

The Incidence of Victimization

Residential burglaries in each of the cities are routinely mapped to show their distribution, both citywide and within police patrol areas. For many cities, maps of annual data -- even a single crime type -- result in maps which can be characterized as big black dots – there is so much crime on the map, that distinctions between places cannot be made. While these maps generally point to large geographic areas in which crime is more prevalent than other areas of each city, they provide little meaningful information about the concentration of crime. Figures 4-6 provide examples of annual residential burglaries mapped at the city level. These spot maps presume a single incidence per address, and the data are so numerous that it is impossible to see that indeed some dots are piled on top of one another -- the spot maps do not show a three-dimensional density to the occurrence of burglaries.

Reducing or limiting the geographic area for which crime is displayed reduces the relative amount of data on the map by decreasing the scale of the map -- for example, mapping burglaries on a beat map. Reducing or limiting the temporal period for which crimes are

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displayed also reduces the relative amount of data on the map. Many police departments use both these methods, typically arraying a week or so of data on a beat map to point to problem locations which may be emerging. Limiting the geographic area in examining crime is quite helpful, but arbitrarily truncating the time period for arraying crime data has implications for identifying or missing the occurrence of repeat offenses. In places where the time course for repeat offenses exceeds the time period of the map, the incidence of repeat victimization is easily obscured. Police and analysts will not be able to visualize the phenomenon of crime piling up at individual addresses because the time frame may be too short. These issues of scale and temporal elements are addressed subsequently, in an examination of the varying time course between serial burglary offenses in each of the study cities.

Figure 4
Residential Burglaries in Baltimore 1996

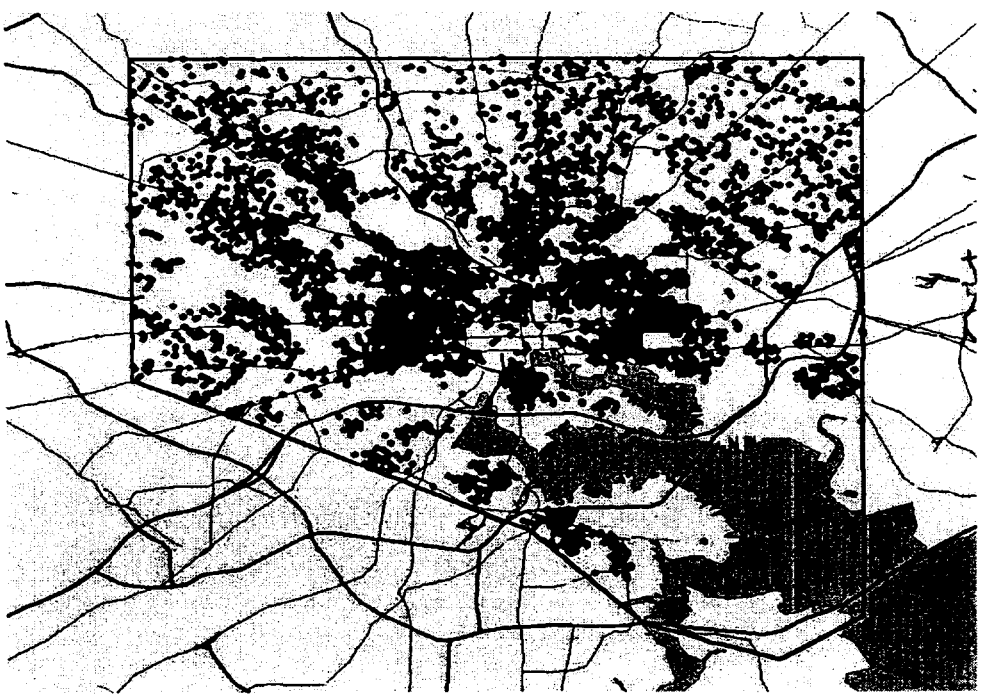

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Figure 5
Residential Burglaries in Dallas

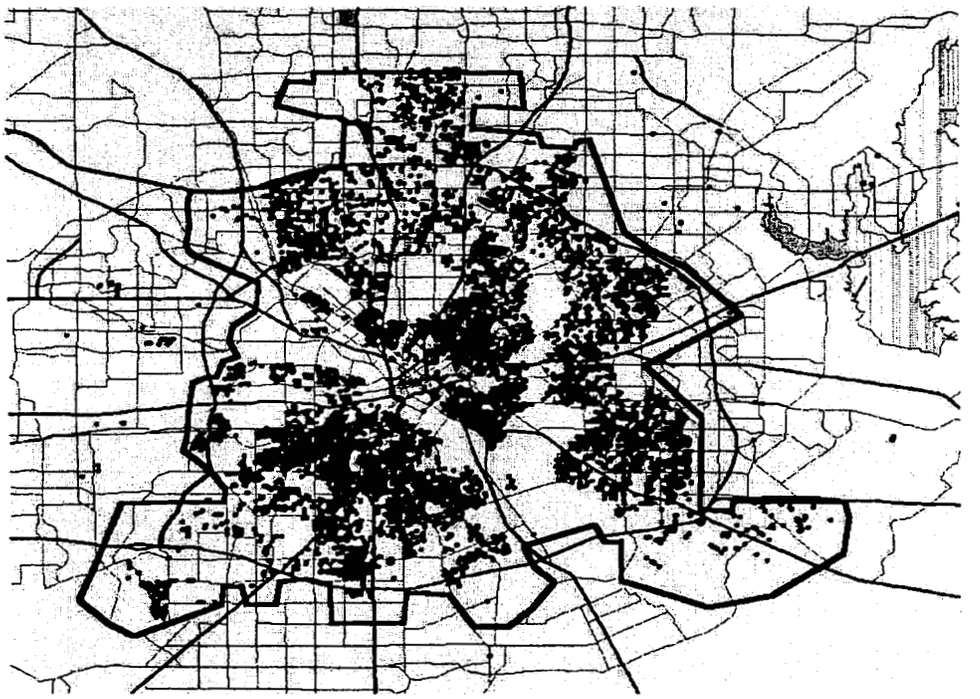

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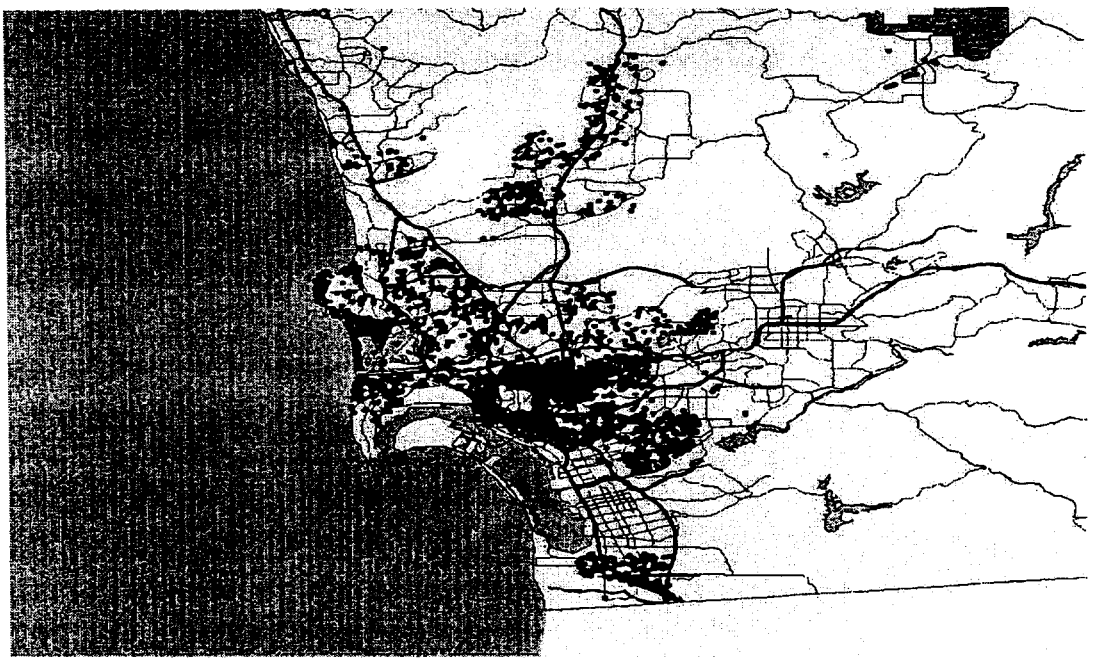
Figure 6
Residential Burglaries in San Diego 1996



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Incidence of Repeat Victimization: Number of Times Burglarized

The incidence of repeat victimization is a measure of the number of times a household at a particular address was burglarized over a period of time. Since some households are victimized repeatedly, their incidence of victimization is higher. In all three study cities, about 80 percent of all burglaries in single-family dwellings are one-time events, occurring at addresses which were burgled just once during a calendar year. The remaining 20 percent of burglaries occurred at addresses which were burglarized multiple times during the year. This calendar-year method of calculating repeat victimization is very conservative, as it undercounts the true incidence of repeat victimization. The calendar-year method treats events occurring at the end of one year as independent from events occurring at the beginning of the next year, although these pairs across years certainly constitute a repeat offense at a particular address. The use of a calendar-year approach in this study was employed to establish a baseline measure -- albeit an extremely conservative one -- of repeat victimization, by using an easily replicable method. The employment of a rolling year -- in which there is a moving window for identifying the incidence of repeat victimization -- makes it difficult for many police to analyze data. However, for purposes of developing interventions and tracking repeat incidents in a jurisdiction, a rolling year -- or moving window -- is both preferable and practical.

Using the conservative calendar-year definition, repeat victimization of single-family dwellings ranged from 11.6 percent in Baltimore, 10.4 percent in Dallas to 4 percent in San Diego for 1996 data. To elaborate, these numbers represent that 11.6 percent of all burglary victims in Baltimore suffered 21 percent of the city's burglaries; a smaller group experienced even greater victimization: 8 percent of burglary victims suffered 15 percent of all burglaries.

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In Dallas, 10.4 percent of all burglary victims suffered 18.6 percent of all burglaries while a smaller group -- 7.5 percent -- suffered 13 percent of all burglaries. San Diego featured the lowest incidence of repeat victimization: 96 percent of burglary victims were victimized only once within the calendar year; 7 percent of the city's reported burglaries, however, occurred at 4 percent of the burglarized addresses.

Another way to look at the incidence of repeat victimization is to examine the number of times each dwelling is burgled. In Baltimore, 90 percent of single-family dwellings were burgled just once. The remaining 10 percent of dwellings were burgled two or more times: 614 dwellings were burgled twice during the year; while 123 were burgled three times; and 26 dwellings were burgled four or more times. Similarly, in Dallas, 91 percent of single-family addresses were burglarized just once, representing 81 percent of the city's total burglaries. But 753 single-family addresses were burgled two or more time: 620 addresses or 7.5 percent of addresses were burgled twice; 98 addresses were burgled three times; while 35 addresses were burgled four or more times during the calendar year. (See tables 2-13)

The incidence of repeat victimization was fairly consistent between 1996 and 1997 for single-family dwellings. In examining 1997 data, 91 percent of all these burglarized addresses in Baltimore were burglarized once, while 18.6 percent of all burglaries occurred at 9.4 percent of addresses. In Dallas, 91 percent of all these addresses were burglarized once; while 18.7 percent of all burglaries occurred at 9.5 percent of addresses; and in San Diego, 95 percent of these addresses were burglarized once, while 10 percent of all burglaries occurred at 5 percent of all addresses.

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Findings about the incidence of repeat victimization of multi-family dwellings, however, presented a much different picture than for single-family dwellings. As anticipated, the incidence of repeat victimization for multi-family dwellings was higher than for single-family dwellings.

In Baltimore, 75 percent of all burglarized multi-family dwellings in 1996 were burglarized just once, representing 54 percent of all burglaries. The remaining 46 percent of the city's burglaries occurred at dwellings which were burglarized two or more times during the calendar year. (See Table 4.) In Baltimore, these repeat occurrences accounted for 883 burglaries. As with single-family dwellings, the findings about repeat victimization were relatively consistent for 1997: 80 percent of burglarized addresses were burglarized just once,

Table 2
1996 Baltimore Single Family Burglaries

Times Burgled	Number of Addresses Burgled	Percent of Addresses	Number of Burglaries	Percent of Burglaries	Number of Repeats	Percent of All Burglaries
1	6515	89.52%	6515	79.15%	0	
2	614	8.44%	1228	14.92%	614	7.46%
3	123	1.69%	369	4.48%	246	2.99%
4	18	0.25%	72	0.87%	54	0.66%
5	6	0.08%	30	0.36%	24	0.29%
6	1	0.01%	6	0.07%	5	0.06%
11	1	0.01%	11	0.13%	10	0.12%
Total	7278	100%	8231	100%	953	11.58%

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Table 3
1997 Baltimore Single-Family Burglaries

Times Burgled	Number of Addresses Burgled	Percent of Addresses	Number of Burglaries	Percent of Burglaries	Number of Repeats	Percent of All Burglaries
1	5970	90.58%	5970	81.44%	0	
2	522	7.92%	1044	14.24%	522	7.12%
3	84	1.27%	252	3.44%	168	2.29%
4	11	0.17%	44	0.60%	33	0.45%
5	3	0.05%	15	0.20%	12	0.16%
6	1	0.02%	6	0.08%	5	0.07%
Total	6591	100.00%	7331	100.00%	740	10.09%

Table 4
1996 Baltimore Multi-Family Burglaries

Times Burgled	Number of Addresses Burgled	Percent of Addresses	Number of Burglaries	Percent of Burglaries	Number of Repeats	Percent of All Burglaries
1	1032	74.73%	1032	53.89%	0	
2	240	17.38%	480	25.07%	240	12.53%
3	66	4.78%	198	10.34%	132	6.89%
4	25	1.81%	100	5.22%	75	3.92%
5	9	0.65%	45	2.35%	36	1.88%
6	6	0.43%	36	1.88%	30	1.57%
7	1	0.07%	7	0.37%	6	0.31%
8	1	0.07%	8	0.42%	7	0.37%
9	1	0.07%	9	0.47%	8	0.42%
Total	1381	100%	1915	100%	534	27.89%

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Table 5
1997 Baltimore Multi-Family Burglaries

Times Burgled	Number of Addresses Burgled	Percent of Addresses	Number of Burglaries	Percent of Burglaries	Number of Repeats	Percent of All Burglaries
1	959	80.25%	959	62.64%	0	
2	174	14.56%	348	22.73%	174	11.37%
3	38	3.18%	114	7.45%	76	4.96%
4	16	1.34%	64	4.18%	48	3.14%
5	5	0.42%	25	1.63%	20	1.31%
6	1	0.08%	6	0.39%	5	0.33%
7	1	0.08%	7	0.46%	6	0.39%
8	1	0.08%	8	0.52%	7	0.46%
Total	1195	100%	1531	99%	336	21.95%

Table 6
1996 Dallas Single Family Burglaries

Times Burgled	Number of Addresses Burgled	Percent of Addresses	Number of Burglaries	Percent of Burglaries	Number of Repeats	Percent of All Burglaries
1	7526	90.90%	7526	81.42%	0	
2	620	7.49%	1240	13.42%	620	6.71%
3	98	1.18%	294	3.18%	196	2.12%
4	18	0.22%	72	0.78%	54	0.58%
5	6	0.07%	30	0.32%	24	0.26%
6	4	0.05%	24	0.26%	20	0.22%
7	3	0.04%	21	0.23%	18	0.19%
8	3	0.04%	24	0.26%	21	0.23%
12	1	0.01%	12	0.13%	11	0.12%
Total	8279	100%	9243	100%	964	10.43%

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Table 7
1997 Dallas Single Family Burglaries

Times Burgled	Number of Addresses Burgled	Percent of Addresses	Number of Burglaries	Percent of Burglaries	Number of Repeats	Percent of All Burglaries
1	5112	90.5%	5112	81.3%	0	
2	465	8.2%	930	14.8%	465	7.4%
3	54	1.0%	162	2.6%	108	1.7%
4	14	0.2%	56	0.9%	42	0.7%
5	3	0.1%	15	0.2%	12	0.2%
6	1	0.0%	6	0.1%	5	0.1%
7	1	0.0%	7	0.1%	6	0.1%
Total	5650	100%	6288	100%	638	10.1%

Table 8
1996 Dallas Multifamily Burglaries

Times Burgled	Number of Addresses Burgled	Percent of Addresses	Number of Burglaries	Percent of Burglaries	Number of Repeats	Percent of All Burglaries
1	1733	60.96%	1733	27.99%	0	
2	512	18.01%	1024	16.54%	512	8.27%
3	218	7.67%	654	10.56%	436	7.04%
4	117	4.12%	468	7.56%	351	5.67%
5	79	2.78%	395	6.38%	316	5.10%
6	35	1.23%	210	3.39%	175	2.83%
7	30	1.06%	210	3.39%	180	2.91%
8	23	0.81%	184	2.97%	161	2.60%
9	20	0.70%	180	2.91%	160	2.58%
10	17	0.60%	170	2.75%	153	2.47%
11	14	0.49%	154	2.49%	140	2.26%
12	8	0.28%	96	1.55%	88	1.42%
13	5	0.18%	65	1.05%	60	0.97%
14	2	0.07%	28	0.45%	26	0.42%
15	5	0.18%	75	1.21%	70	1.13%
16	2	0.07%	32	0.52%	30	0.48%
17	6	0.21%	102	1.65%	96	1.55%

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18	2	0.07%	36	0.58%	34	0.55%
19	2	0.07%	38	0.61%	36	0.58%
20	1	0.04%	20	0.32%	19	0.31%
21	2	0.07%	42	0.68%	40	0.65%
22	4	0.14%	88	1.42%	84	1.36%
23	1	0.04%	23	0.37%	22	0.36%
29	1	0.04%	29	0.47%	28	0.45%
30	1	0.04%	30	0.48%	29	0.47%
33	1	0.04%	33	0.53%	32	0.52%
36	2	0.07%	72	1.16%	70	1.13%
	2843	100%	6191	100%	3348	54.08%

Table 9
1997 Dallas Multifamily Burglaries

Times Burgled	Number of Addresses Burgled	Percent of Addresses	Number of Burglaries	Percent of Burglaries	Number of Repeats	Percent of All Burglaries
1	1450	67.1%	1450	33.3%	0	
2	306	14.2%	612	14.0%	306	7.0%
3	132	6.1%	396	9.1%	264	6.1%
4	93	4.3%	372	8.5%	279	6.4%
5	43	2.0%	215	4.9%	172	3.9%
6	31	1.4%	186	4.3%	155	3.6%
7	23	1.1%	161	3.7%	138	3.2%
8	17	0.8%	136	3.1%	119	2.7%
9	9	0.4%	81	1.9%	72	1.7%
10	13	0.6%	130	3.0%	117	2.7%
11	16	0.7%	176	4.0%	160	3.7%
12 or more	28	1.3%	445	10.2%	417	9.6%
Total	2161	100%	4360	100%	2199	50.4%

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Table 10
1996 San Diego Single Family Burglaries

Times Burgled	Number of Addresses Burgled	Percent of Addresses	Number of Burglaries	Percent of Burglaries	Number of Repeats	Percent of All Burglaries
1	1523	96.21%	1523	92.53%	0	
2	57	3.60%	114	6.93%	57	3.46%
3	3	0.19%	9	0.55%	6	0.36%
Total	1583	100.00%	1646	100.00%	63	3.83%

Table 11
1997 San Diego Single Family Burglaries

Times Burgled	Number of Addresses Burgled	Percent of Addresses	Number of Burglaries	Percent of Burglaries	Number of Repeats	Percent of All Burglaries
1	2012	95.22%	2012	90.35%	0	
2	92	4.35%	184	8.26%	92	4.13%
3	7	0.33%	21	0.94%	14	0.63%
4	1	0.05%	4	0.18%	3	0.13%
6	1	0.05%	6	0.27%	5	0.22%
Total	2113	100.00%	2227	100.00%	114	5.12%

Table 12
1996 San Diego Multi-family Burglaries

Times Burgled	Number of Addresses Burgled	Percent of Addresses	Number of Burglaries	Percent of Burglaries	Number of Repeats	Percent of All Burglaries
1	2698	90.78%	2698	80.80%	0	
2	216	7.27%	432	12.94%	216	6.47%
3	45	1.51%	135	4.04%	90	2.70%
4	4	0.13%	16	0.48%	12	0.36%
5	6	0.20%	30	0.90%	24	0.72%
9	2	0.07%	18	0.54%	16	0.48%
10	1	0.03%	10	0.30%	9	0.27%
Total	2972	100%	3339	100%	367	10.99%

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Table 13
1997 San Diego Multi-family Burglaries

Times Burgled	Number of Addresses Burgled	Percent of Addresses	Number of Burglaries	Percent of Burglaries	Number of Repeats	Percent of All Burglaries
1	2019	89.22%	2019	77.24%	0	
2	177	7.82%	354	13.54%	177	6.77%
3	42	1.86%	126	4.82%	84	3.21%
4	17	0.75%	68	2.60%	51	1.95%
5	5	0.22%	25	0.96%	20	0.77%
6	1	0.04%	6	0.23%	5	0.19%
7	1	0.04%	7	0.27%	6	0.23%
9	1	0.04%	9	0.34%	8	0.31%
Total	2263	100%	2614	100%	351	13.43%

accounting for 63 percent of all burglaries; 37 percent of burglaries occurred at addresses which were burgled twice or more during the calendar year (See Table 5).

In Dallas, 61 percent of multi-family addresses burglarized in 1996 were burglarized once, accounting for 28 percent of all burglaries. The remaining 72 percent of all burglaries occurred at the 39 percent of addresses which were burgled two or more times. (See Table 8.) Of the multi-family addresses burglarized in Dallas in 1997, 67 percent were burglarized once; while 33 percent of addresses represented 67 percent of all burglaries. (See Table 9.)

In San Diego, 91 percent of all multi-family addresses burglarized in 1996 accounted for 81 percent of all burglaries; while 9 percent of addresses accounted for 19 percent of all burglaries. (See Table 12.) In 1997, 89 percent of all addresses accounted for 77 percent of all burglaries; while 11 percent of all addresses represented 23 percent of all burglaries. (See Table 13.)

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The proportion of addresses which are repeatedly burgled are easier to visualize on a bar chart. See Figure 7 and Figure 8. The limitation of these charts is that these charts array the *addresses* burglarized, rather than illustrating the proportional intensity of burglaries at addresses which are repeatedly burglarized. This is a subtle but important distinction. In contrast to addresses burglarized, Figures 9 and 10 display all *burglaries*, distributed proportionally between those which were one-time occurrences and those which represent two or more occurrences. These tables illustrate the proportion of burglaries which are related to multiple offenses compared with one-time events.

The category of "burglarized more than once" more than doubles between Figure 7 to Figure 9, and from Figure 8 to Figure 10. This is a logical finding since the addresses burglarized multiple times account for a larger proportion of all burglaries. The proportional increase is larger for multi-family addresses, since these addresses typically feature more than two offenses per address. This is particularly true in Dallas, where the use of a single address as the unit of analysis results in a greater piling up of burglary offenses.

Figure 7
Addresses Burglarized
Single-Family Premises 1996

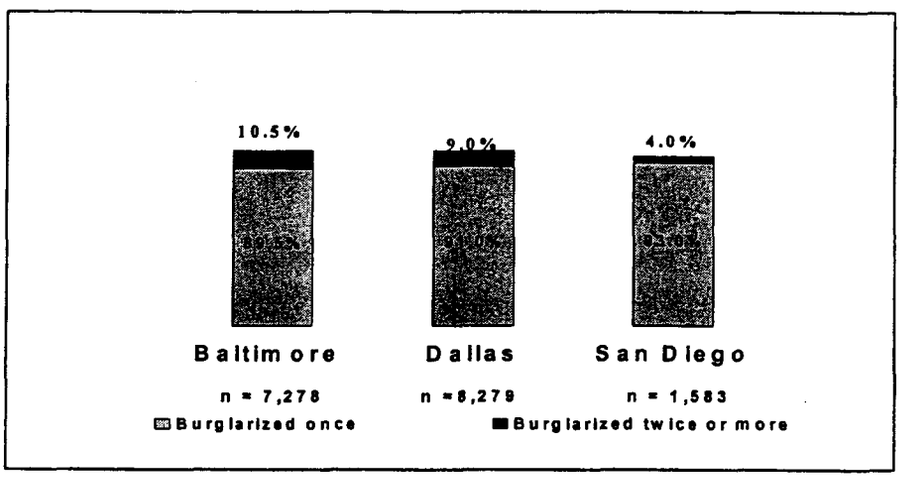

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Figure 8
Addresses Burglarized
Multi-family Premises 1996

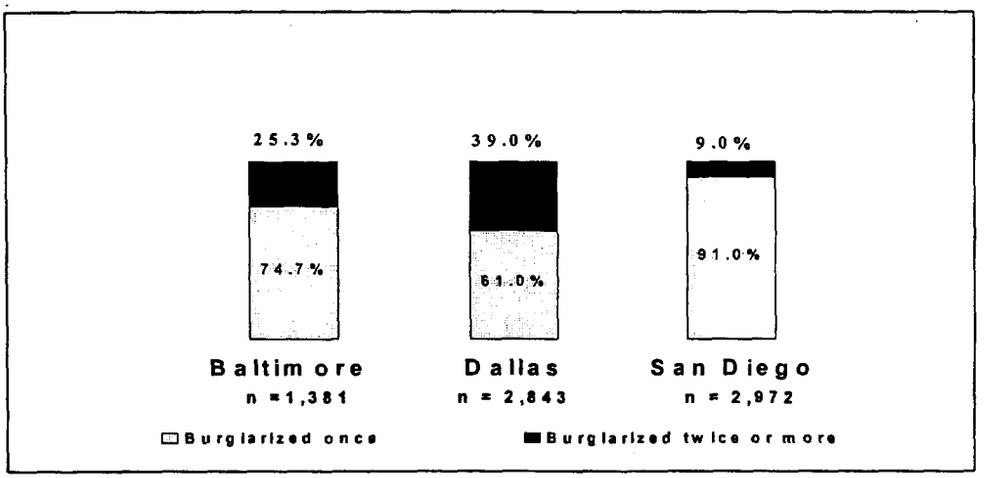

Figure 9
Burglaries
Single-Family Premises

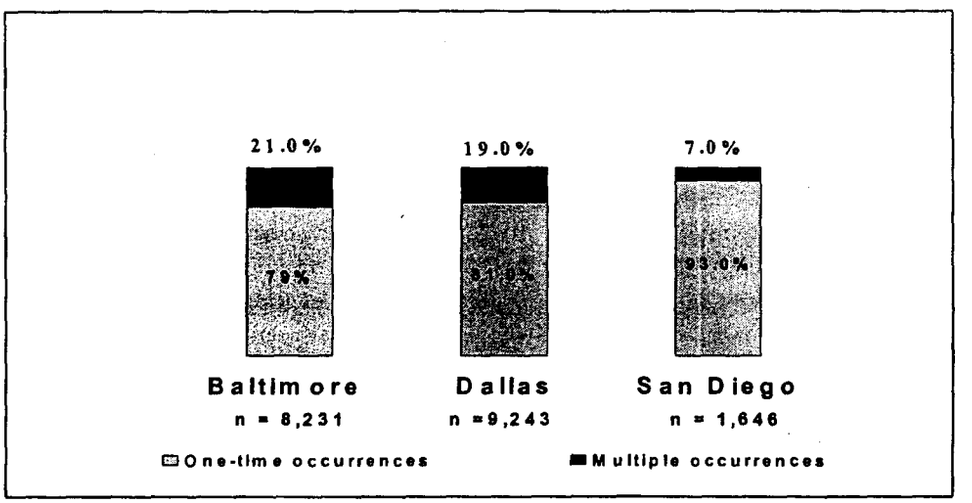

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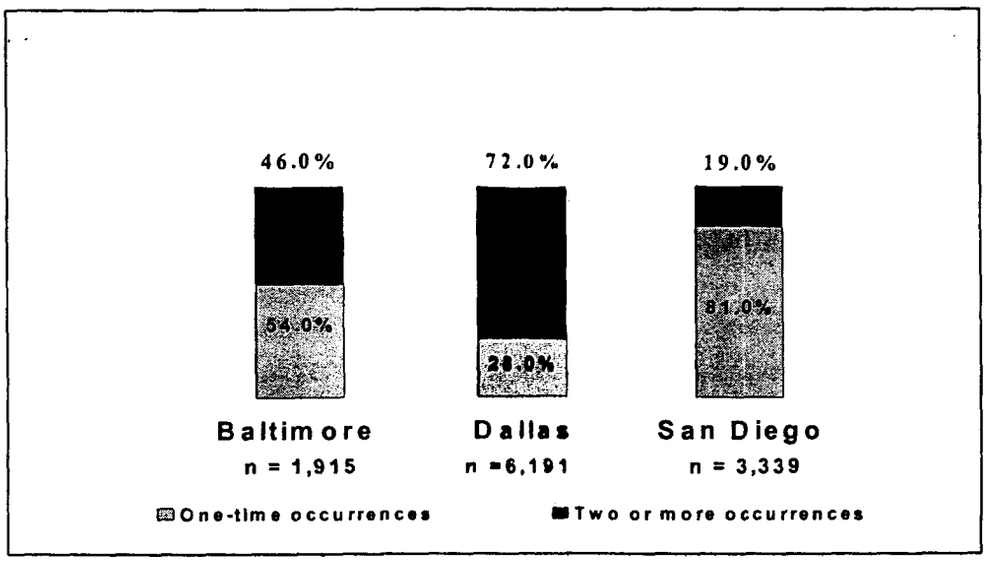
Figure 10
Burglaries
Multi-Family Premises



Increased risk of victimization

While the incidence of repeat victimization may not appear considerable or excessive upon initial examination, the reader should recall that the extent of repeat victimization reported is extremely conservative, especially for single-family dwellings, given the use of the within-year definition of repeat victimization. However, the extent of repeat victimization appears much more substantial when examining the increased risk of serial victimization associated with initial victimization. (See Tables 14 and 15.) In Baltimore, a single-family residence has a 1:27 chance of being burglarized at least once within a calendar year.[2] Once burglarized, however, the dwelling's risk nearly triples to 1:10. In Dallas, the risk of at least one burglary for a single-family residence is about 1:33; after an initial burglary, the risk triples to 1:11. The risk of an initial burglary is lowest for single-family dwellings in San Diego, where the risk of being

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burglarized at least once is 1:156; once burglarized, however, risk increases nearly nine-fold to 1:18.

A similar pattern of increasing risk unfolded for multi-family housing, but the additional risk of repeat victimization was phenomenally higher: the risk of a second burglary was nearly 20 times greater in Baltimore, 28 times greater in Dallas, and nearly six times greater in San Diego. As discussed subsequently, these increased risks are even more substantial in areas of the cities in which burglaries and repeat victimization are clustered. While variation in the risk of being burglarized at least once is directly related to the variations in the burglary rate in each city, the risk of repeat victimization does not covary consistently with differences in crime rates.

Table 14
Citywide Single Family Dwelling Victimization Risk

	Risk of being burglarized at least once[3]	If burglarized once, risk of being burglarized again[4]
Baltimore	1:27	1:10
Dallas	1:33	1:11
San Diego	1:156	1:26

Table 15
Citywide Multi-Family Dwelling Victimization Risk

	Risk of being burglarized at least once	If burglarized once, risk of being Burglarized again
Baltimore	1:77	1:4
Dallas	1:83	1:3
San Diego	1:60	1:11

[2] Risk estimates are based upon the number of single-family housing units. Victimization is typically computed on population but the separation of single-family and multi-family dwellings makes this calculation more appropriate for this analysis.

[3] Victimization risk is based upon the number of housing units by premise type in each city, divided by the number of addresses burgled. Victimization risks as offense rates are typically computed by population, however, the unit of analysis for this study consists of the housing unit rather than individuals or households.

[4] Risk of subsequent victimization is based upon the number of addresses burgled divided by the number of repeat addresses -- those addresses which were subsequently victimized at least once more within the calendar year.

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Concentration of Victimization: Hot dots in hot spots

The incidence of victimization and repeat victimization has been presented at the citywide level. Because burglaries are not spread evenly across cities but instead tend to concentrate somewhat in particular geographic areas, the incidence of repeat victimization is somewhat diluted when examining city-wide data. In other words, the extent of repeat victimization is higher in areas where burglaries are more numerous and that effect is somewhat washed out by included larger geographic areas which feature single occurrences of burglary. Consistent with the literature (for example, Sherman 1989, 1995; Bennett 1995; Spelman 1995), repeat victimization in this study varied within cities as it is clustered in high crime areas or hot spots.

To examine the ways in which crime and repeat victimization clustered within the three cities, the 10 census tracts within each city were selected which featured the most burglaries. Through the processes of address sorting by census tracts, we were able to determine burglarized addresses which were located within these high-crime census tracts. The amount of repeat victimization generally -- but not consistently -- increased when comparing city-wide to high-crime areas. The amount of repeat victimization increased for both single-family and multi-family dwellings in Baltimore (from 11.5 percent to 14.8 percent; from 27.9 percent to 35.7 percent respectively). The amount of repeat victimization increased slightly for single-family dwellings in Dallas (from 10.4 to 11.1 percent) but increased substantially for multi-family dwellings -- from 55 to 86.6 percent. In San Diego, the amount of repeat victimization increased slightly for single-family dwellings in high crime areas when compared to city-wide, rising from

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3.8 to 5.6 percent; and stayed the same for multi-family dwellings in high crime areas compared to city-wide at 11.0 percent.

The findings about increased repeat victimization in high-crime areas were not as strong as expected. Part of this finding relates to the ways in which crime is distributed in different cities, and the variations in housing stock. (See Tables 16 - 21) In some cases, the burglary rate -- that is, the likelihood of being victimized by a burglary -- were the same for the high crime area as for the city. In these cases, the incidence of repeat victimization was nearly identical city wide as in the high crime areas. The victimization risk for multi-family dwellings in San Diego is a good example of the similarity between high crime areas and citywide data --the risk of being burgled at least once in the city (1:60) was nearly identical to being burgled at least once in the high crime areas (1:52); consistently, the risk of being revictimized was 1:11 for the city and high crime areas.

Table 16
Baltimore 1996
10 Most-Burgled Census Tracts
Compared with City Wide Single Family Burglaries

	City Wide	Most Burgled Tracts	Most-Burgled Tracts as Percent of City
SF Housing Units	193938	12693	6.54%
Addresses Burgled	7278	859	11.80%
Burglaries	8231	1008	12.25%
Repeat Burglaries	953	149	15.63%
Repeat % of all Burglaries	11.58%	14.78%	
Repeat Addresses	763	122	15.99%
Repeat % of Addresses Burgled	10.48%	14.20%	
Burglary Rate	0.037527457	0.067675097	
Repeat Rate	0.104836494	0.142025611	

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Table 17
Baltimore 1996
10 Most-Burgled Census Tracts
Compared with City Wide Multifamily Burglaries

	City Wide	Most-Burgled Tracts	Most-Burgled Tracts as Percent of City
MF Housing Units	106553	18170	16.14%
Addresses Burgled	1381	340	24.62%
Burglaries	1915	529	27.62%
Repeat Burglaries	534	189	35.39%
Repeat % of all Burglaries	27.89%	35.73%	
Repeat Addresses	349	115	34.96%
Repeat % of Addresses Burgled	25.27%	35.88%	
Burglary Rate	0.012960686	0.019766293	
Repeat Rate	0.252715424	0.358823529	

Table 18
Dallas 1996
10 Most-Burgled Census Tracts
Compared with City Wide Single Family Burglaries

	City Wide	Most-Burgled Tracts	Most-Burgled Tracts as Percent of City
SF Housing Units	273045	20617	7.55%
Addresses Burgled	8279	1182	14.28%
Burglaries	9243	1329	14.38%
Repeat Burglaries	964	147	15.25%
Repeat % of all Burglaries	10.43%	11.06%	
Repeat Addresses	753	105	13.94%
Repeat % of Addresses Burgled	9.10%	8.88%	
Burglary Rate	0.030321009	0.057331329	
Repeat Rate	0.090953014	0.088832487	

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Table 19
Dallas 1996
10 Most-Burgled Census Tracts
Compared with City Wide Multifamily Burglaries

	City Wide	Most-Burgled Tracts	Most-Burgled Tracts as Percent of City
MF Housing Units	236454	33992	14.38%
Addresses Burgled	2843	483	16.99%
Burglaries	6191	1536	24.81%
Repeat Burglaries	3348	1053	31.45%
Repeat % of all Burglaries	54.08%	68.55%	
Repeat Addresses	1110	259	23.33%
Repeat % of Addresses Burgled	39.04%	53.62%	
Burglary Rate	0.01202348	0.014209226	
Repeat Rate	0.390432642	0.536231884	

Table 20
San Diego 1996
10 Most-Burgled Census Tracts
Compared with City Wide Single Family Burglaries

	City Wide	Most-Burgled Tracts	Most-Burgled Tracts as Percent of City
SF Housing Units	246726	18980	7.69%
Addresses Burgled	1583	236	14.91%
Burglaries	1646	250	15.19%
Repeat Burglaries	63	14	22.22%
Repeat % of all Burglaries	3.83%	5.60%	
Repeat Addresses	60	13	21.67%
Repeat % of Addresses Burgled	3.79%	5.51%	
Burglary Rate	0.006416024	0.012434141	
Repeat Rate	0.037902716	0.055084746	

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Table 21
San Diego
1996 10 Most-Burgled Census Tracts
Compared with City Wide Multifamily Burglaries

	City Wide	Most-Burgled Tracts	Most-Burgled Areas as Percent of City
MF Housing Units	179634	22917	12.76%
Addresses Burgled	2972	444	14.94%
Burglaries	3339	499	14.94%
Repeat Burglaries	367	55	14.99%
Repeat % of all Burglaries	10.99%	11.02%	
Repeat Addresses	274	39	14.23%
Repeat % of Addresses Burgled	9.22%	8.78%	
Burglary Rate	0.016544752	0.019374264	
Repeat Rate	0.092193809	0.087837838	

Initial victimization risk increases in each of the cities and for both housing types when moving from citywide analysis to high crime areas. Comparing the citywide information about victimization presented in Tables 14 and 15 with the high crime area information presented in tables 22 and 23, the risk of being burglarized once doubles in each city. For example, a single-family resident has a 1:27 chance of being burglarized at least once in Baltimore; in the high crime areas of Baltimore, that risk increases to 1:15. This pattern of doubled risk holds for all single-family dwellings. When changing the scale of analysis from citywide to high crime area for multi-family dwellings, the increased risk is not as dramatic: the initial burglary risk rises from 1:77 to 1:53 in Baltimore, from 1:83 to 1:70 for Dallas and from 1:60 to 1:52 for San Diego.

The change in repeat victimization when moving from citywide to high crime areas is not as consistent as the change in initial victimization risk. Risk of repeat victimization in single-family dwellings climbs from 1:10 to 1:8 in Baltimore; stays flat at 1:11 in Dallas; and climbs

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from 1:26 to 1:18 in San Diego. Risk of repeat victimization in multi-family dwellings climbs from 1:4 to 1:3 in Baltimore; climbs from 1:3 to 1:2 in Dallas; and stays flat at 1:11 in San Diego.

Table 22
High Crime Census Tracts: Single-Family Dwelling Victimization Risk

	Risk of being burglarized at least once[5]	If burglarized once, risk of being burglarized again
Baltimore	1:15	1:8
Dallas	1:17	1:11
San Diego	1:80	1:18

Table 23
High Crime Census Tracts: Multi-Family Dwelling Victimization Risk

	Risk of being burglarized at least once	If burglarized once, risk of being Burglarized again[6]
Baltimore	1:53	1:3
Dallas	1:70	1:2
San Diego	1:52	1:11

As with the earlier findings, these variations in victimization and repeat victimization appear to reflect variations in both the concentration of crime within cities and the housing stock. The most significant -- and consistent finding -- across both housing types and across all three cities, is that once burglarized, a residence has a significantly higher risk of being burglarized again.

[5] Victimization risk is based upon the number of housing units in each city, divided by the number of addresses burgled. Victimization risks as offense rates are typically computed by population, however, the unit of analysis for this study consists of the housing unit rather than individuals or households.

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Hot Dots in Hot Spots: Examining Repeat Victimization

The distribution or clustering of repeat victimization is enhanced when presented visually; mapping reveals the proximity between clusters of crime and the incidence of repeats. While Figure 4 shows the distribution of all burglaries in Baltimore for a single year, presenting the "big black dot" or too much data over too long a period of time. By limiting the geographic parameters of a map to a single geographic area, we are able to see the see the distinctions between individual crime and identify clusters or hot spots of crime. These clusters of crime are illuminated further by identifying locations of repeat offenses through the use of scaled icons in which proportionally larger symbols represent the proportion of offenses occurring at those addresses. In this way, these scaled maps points to the hot dots within the hot spots. Locations or places which repeatedly burglarized stand out on the map in the midst of the hot spot clusters, as depicted in Figures 11-13. The use of spot maps and scaled icons is more useful in mapping of some offense distribution than in others. For example, the crimes mapped in Figure 8 point very clearly to the piling up of offenses at the large multi-family addresses along major corridors. By layering offenses, spot mapping can be used as a visual aid to overcome the definitional limitations of near repeats. The map portrays the intensity of crime in specific locations -- regardless of whether the offense occurs at a unique address, the clustering effect demonstrates the hot dots within a hot spot. This visual representation of the clustering of crime is a useful mechanism for identifying problem locations and focusing resources.

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Figure 11
Repeat Burglaries in experimental area of Baltimore

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Figure 12
Repeat burglaries in experimental area of Dallas

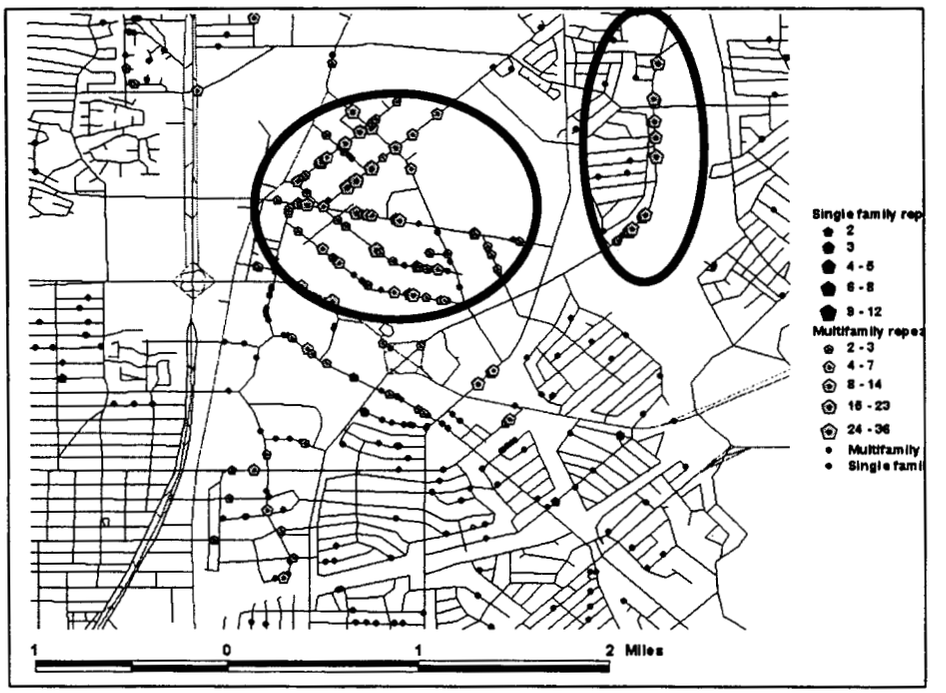
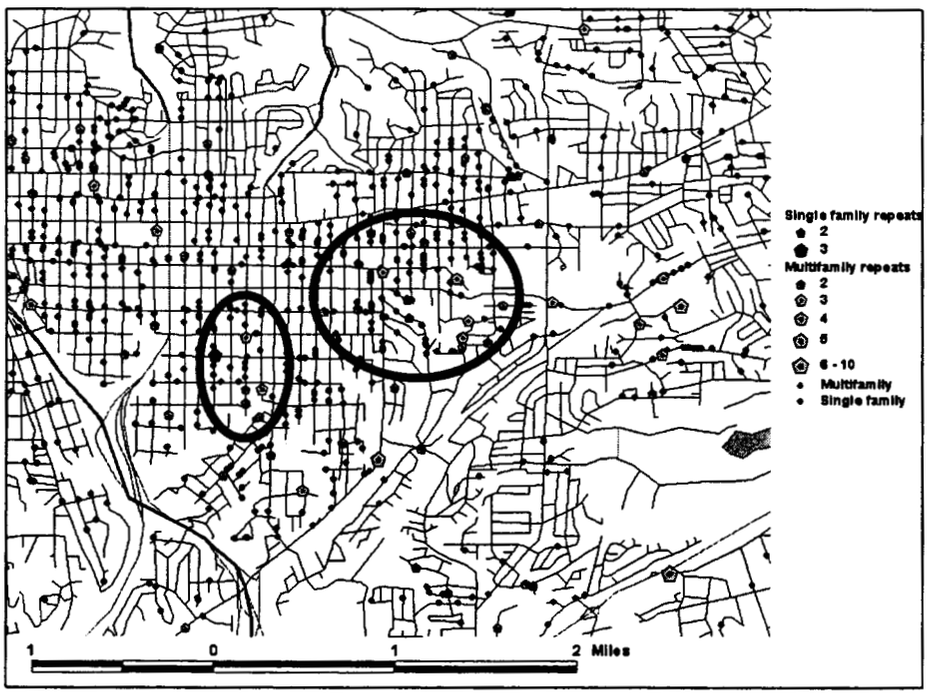


Figure 13
Repeat burglaries in experimental area of San Diego



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The ellipses on the maps (Figures 11-13) are used to visually highlight areas in which repeat victimization clusters on maps of rather large geographical areas featuring annual data. Hot spot boundaries could be increased or decreased depending upon resources or other factors. This series of maps reflect variations in the density of victimization and the relative density of repeat victimization. In some maps, such as Figure 12 representing an area of Dallas, patterns of repeat victimization are much easier to detect.

Time course

Despite some limitations to police offense data, it is useful for documenting the time course during which serial victimization occurs. Most studies of repeat victimization have shown that the recurrence of victimization is quite rapid -- an important finding for police practitioners because it informs the time frame for a window of heightened vulnerability -- the period during which the victim has a greatly increased likelihood of being victimized again. The findings from this study validate this finding, although there are differences between cities and between types of housing. The analysis of time course treats each pair of burglaries as an independent event; that is, the time course is computed from the first to the second offense, and from the second to the third offense for the smaller proportion of addresses which suffered more than two offenses during the calendar year.

The shortest time course of all three cities between initial burglary and subsequent burglary occurred in San Diego -- the city with the least amount of repeat victimization. (See Figure 14.) For single-family dwellings, 75 percent of repeat offenses occurred within two days of the first reported burglary and 97 percent of repeat offenses occurred with 14 days of the first

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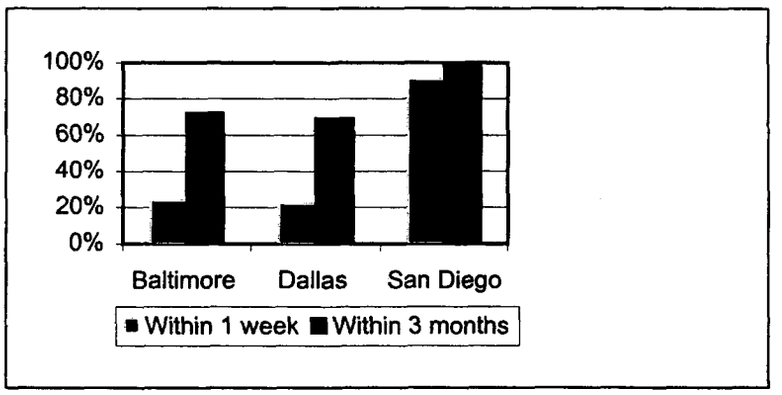
offense. The time course in San Diego is nearly as compressed for multi-family dwellings: 73 percent of second offenses occurred within two days, while 92 percent occurred within 14 days of the first offense. (See details in Appendix D). This temporary window of heightened risk has great promise -- particularly in San Diego -- as it demonstrates that there is a brief period in which police may intervene rapidly to prevent a subsequent offense from occurring.

In contrast to San Diego, the time course for repeats or the period of heightened vulnerability is longer in Dallas and Baltimore, but still reflects a rapid recurrence and similarity between the latter two cities. In Baltimore, 24 percent of repeats occurred within a week in both single-family and multi-family dwellings. By the three-month mark, 70 and 72 percent of repeat offenses had occurred, respectively, in single-family and multi-family dwellings.

In Dallas, 22 percent of repeat offenses in single-family dwellings occurred within a week of the initial burglary and about 20 percent in multi-family occurred within the same period; 69 percent of repeat offenses occurred within three months in single-family dwellings and 76 percent of repeat offenses in multi-family dwellings occurred within the same time frame. By the six-month mark after the initial offense, 86 to 93 percent of repeat occurrences had taken place in all burglarized dwellings in Dallas and Baltimore.

Figure 14
Time Course between Repeat Burglaries
Single-Family Premises



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The consistency of the time course for repeat offenses between single-family and multi-family dwellings is puzzling. Since offenses in multi-family buildings are treated as near repeats in this analysis -- that is, the second offense may have occurred at an apartment next door to the initial offense, a shorter time course for multi-family dwellings than single-family dwellings was anticipated. Indeed, the observed time course for multi-family offenses may be an artifact of treating burglary pairs -- initial and subsequent burglary -- as independent events. For example, a burglary series of three or more offenses may have occurred in an apartment building over a short period of time; the analytical method for specifying time course, however, treats each of the pairs of offenses in the series independently. Thus, the initial and subsequent offense are treated as a pair; the second burglary and its subsequent burglary are treated as pair

Impact on burglary

In most cities across the nation, burglaries have been declining since 1992. The FBI's UCR reports that burglaries declined nationally 1.8 percent from 1996 to 1997. Similarly burglary trends were also declining for the three cities in this study. But crime trends aggregate crime throughout a city, while this study examined smaller areas within each city.

A preliminary examination of the impact of the study on burglaries in each city is a comparison of the total number of burglaries during the study period with the total number of burglaries in the previous year -- a year-to-year comparison. (This method of comparison is often used by practitioners but lacks the validity with more sophisticated analysis which are described in the subsequent section of this report.) Using the year-to-year comparison, two study sites -- Baltimore and San Diego-- marked declines over the study period. Baltimore

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experienced a small decline, however burglaries increased in the comparison area. San Diego experienced a large decline in burglaries, however, burglaries also declined in the comparison area albeit not as much as in the experimental area. In Dallas, burglaries increased in the experimental area while declining in the comparison area (See Figures 15-17).

Figure 15
Change in Burglaries: Baltimore

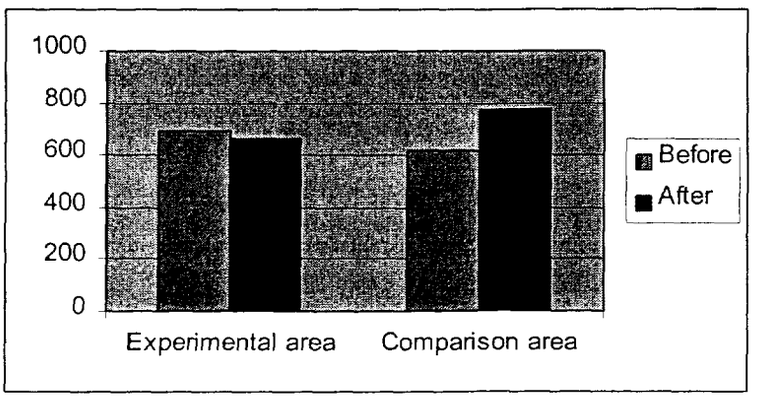

Figure 16
Change in Burglaries: Dallas

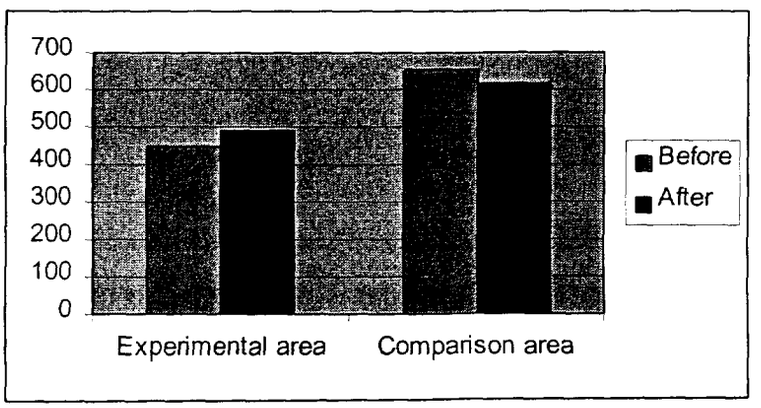

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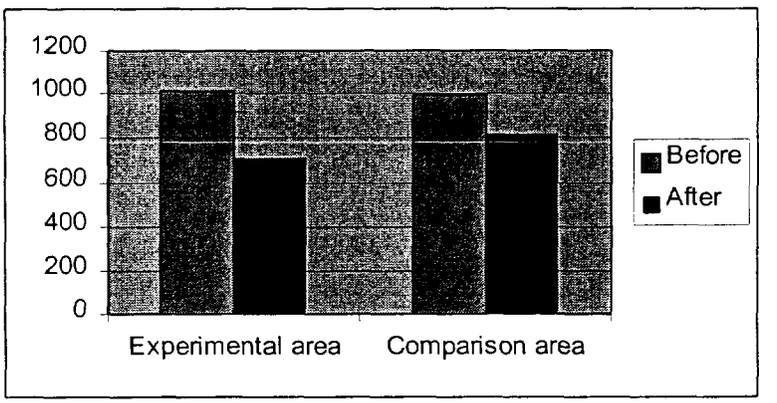
Figure 17
Change in Burglaries: San Diego



In San Diego, the total number of burglaries during the year-long period of the study declined 30 percent in the experimental area (from 1011 to 707), compared with a 18 percent decline in the comparison area (from 993 to 814). In Dallas, burglaries during the year-long period of the study increased 9 percent in the experimental area (from 447 to 489), compared to a 5.6 percent decline (from 654 to 617) in the comparison area.

In Baltimore, burglaries during the year-long period of the study declined 5.2 percent in the experimental period (from 692 to 658), compared to a 24.7 percent increase in the comparison area (from 620 to 773).

The one-year comparisons of increase and decrease in burglaries is a rather simple model albeit often used. Another model commonly used to measure impact of treatments is a month-by-month comparison with the prior year. (See Figures 18-20.) A comparison of these prior-year patterns shows mixed results in the study cities. In Baltimore, burglaries in the experimental area were higher for six of the 12 months than in the previous year, although burglaries overall declined. In Dallas, the 1998 burglaries tracked the same general seasonal

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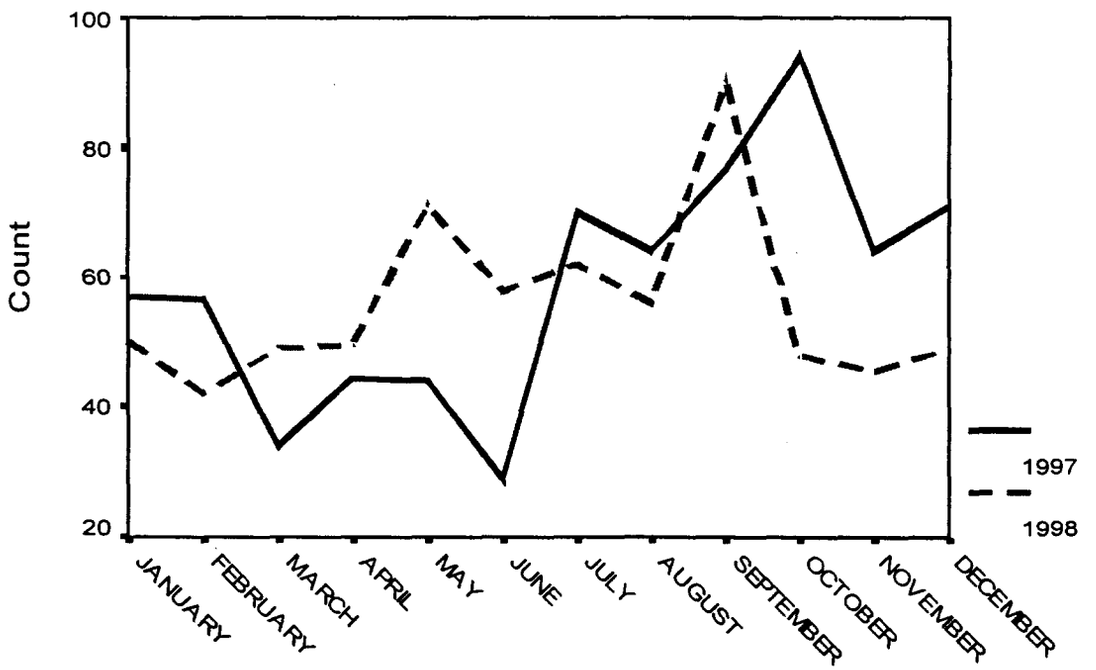
patterns as the 1997 offenses: the offenses were higher in two months of 1998 and the same for two months; in 8 of 12 months, monthly offenses were fewer in 1998 than in 1997 although there was an overall increase of burglaries in the Dallas experimental area. In San Diego, burglaries in 1998 followed the same seasonal trend as in 1997; until September 1998 -- when the experiment ended -- then burglaries increased substantially. The findings from the month-to-month comparison with prior year burglaries and the change in burglaries during the year of the experimental treatment suggest the study contributed to a decline in burglaries in San Diego, had a modest impact in Baltimore, and had no impact in Dallas.

Figure 18
Baltimore
Comparison of burglaries in prior year in experimental area



Both the year-to-year and prior-year comparison models have limitations. A more careful

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Figure 19
Dallas
Comparison of burglaries with prior year in experimental area

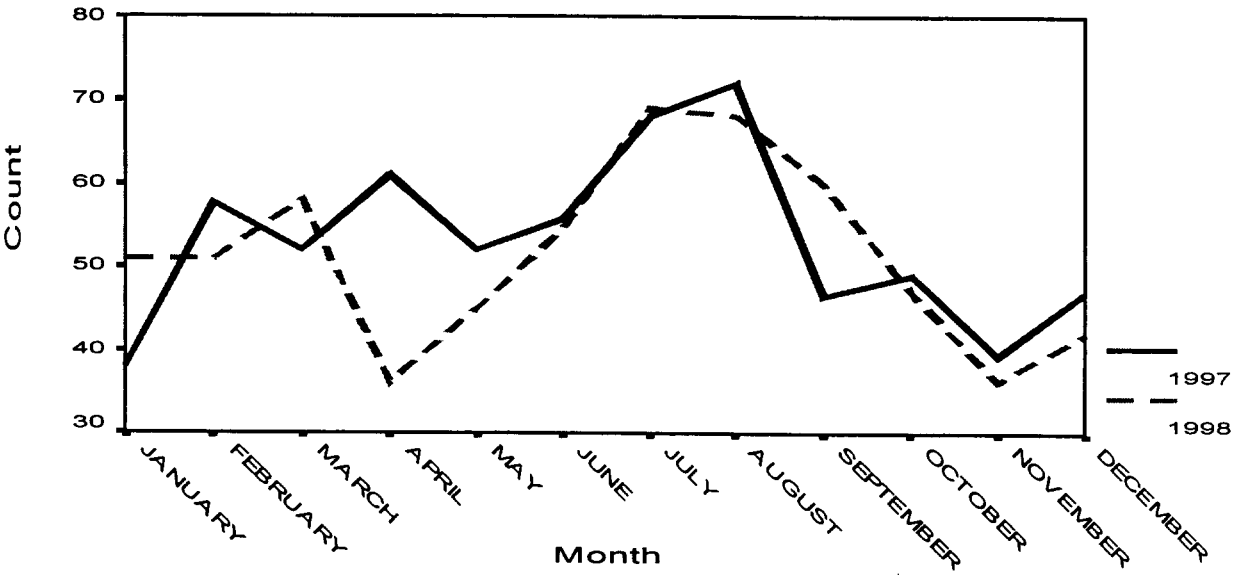
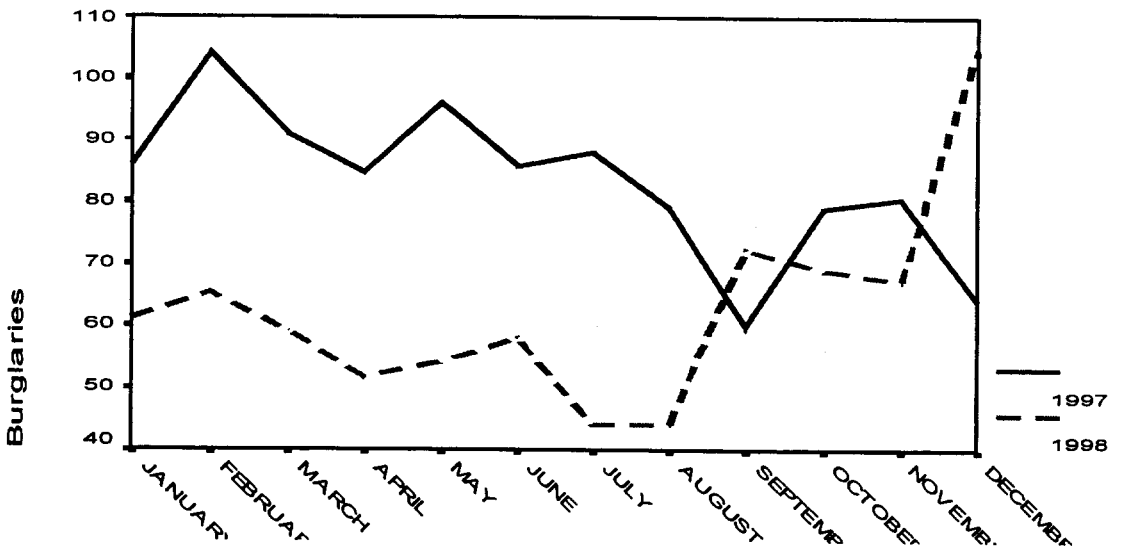


Figure 20
San Diego
Comparison of burglaries with prior year in experimental area



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A more careful statistical analysis of the impact on burglaries in the experimental and comparison areas for the three study cities involves procedures which include a larger number of monthly observations in the analysis, and which incorporate the overall trend of offenses. In other words, the time series models mediate the general decline of burglaries occurring in each of the cities. These interrupted time series models are reflected in the sequence charts in figures 21-23.

Figure 21
Baltimore Residential Burglaries
January 1994 - December 1998

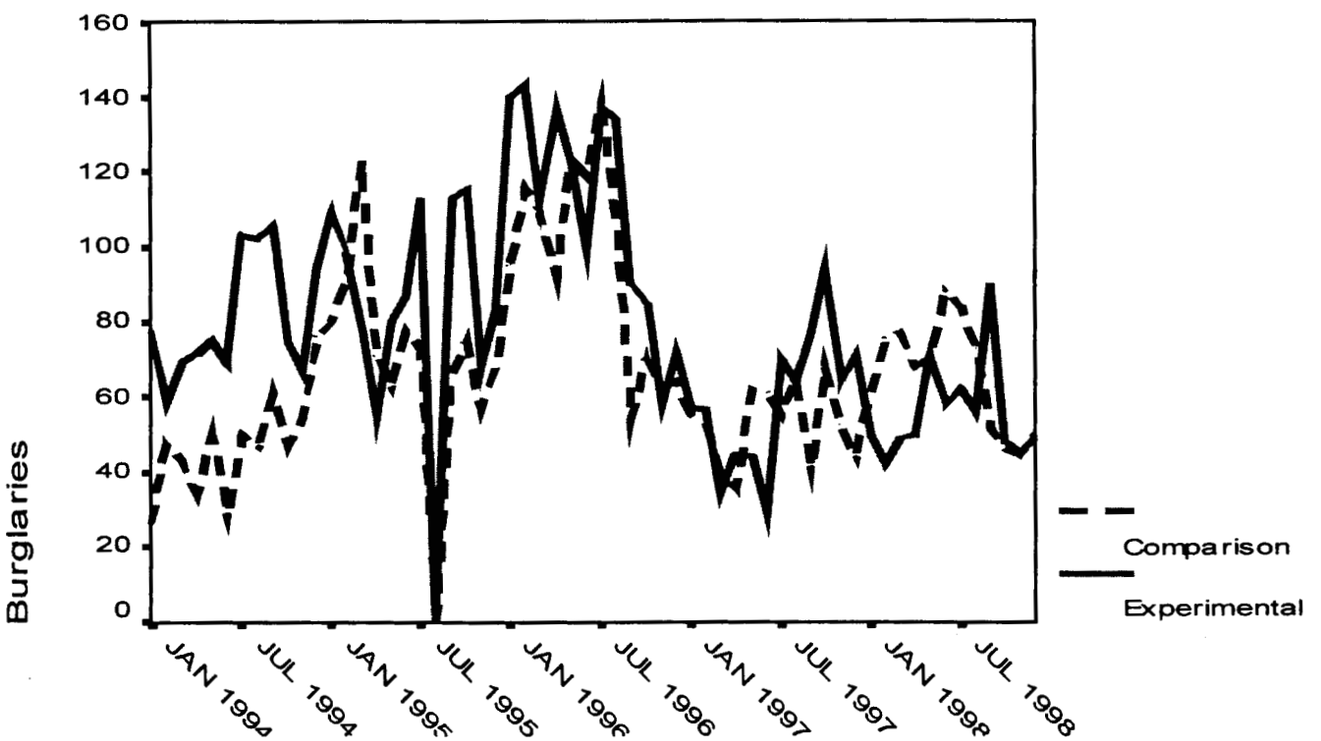

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Figure 22
Dallas Residential Burglaries
January 1994 - December 1998

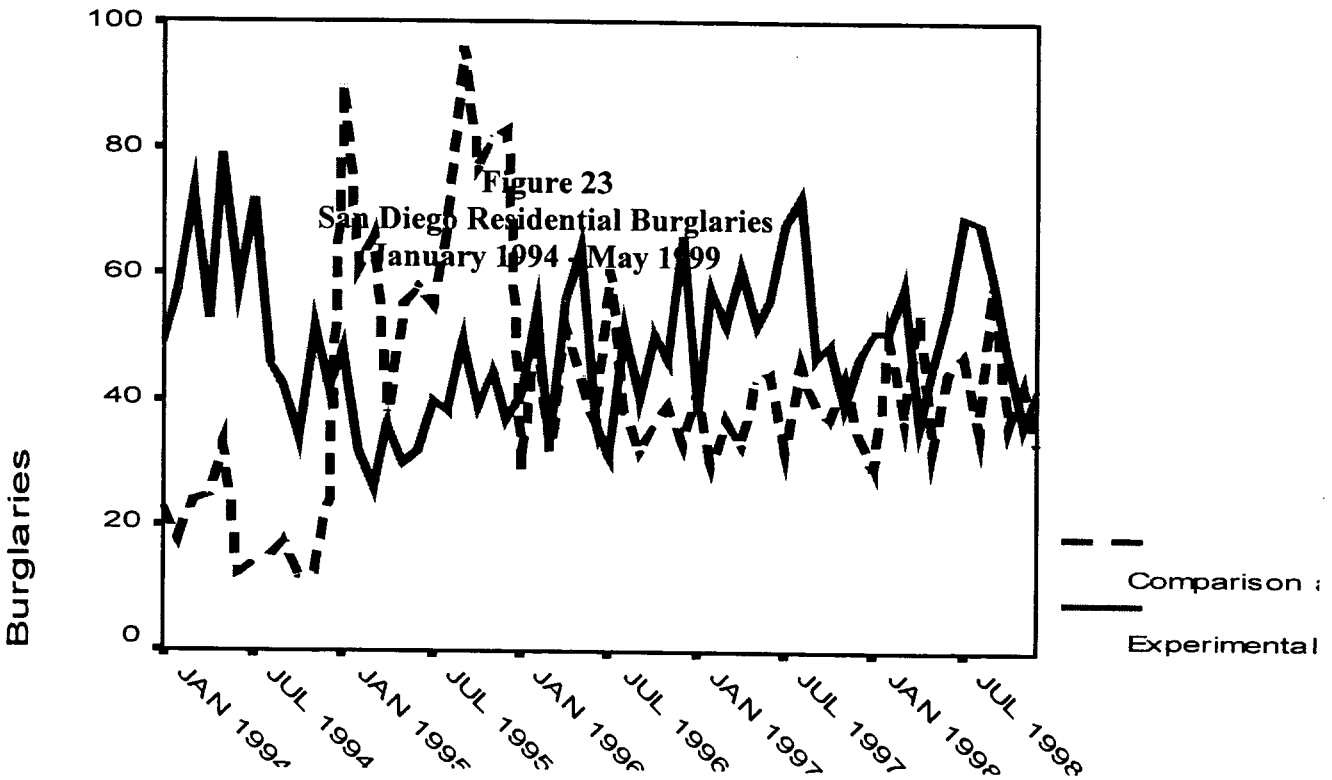
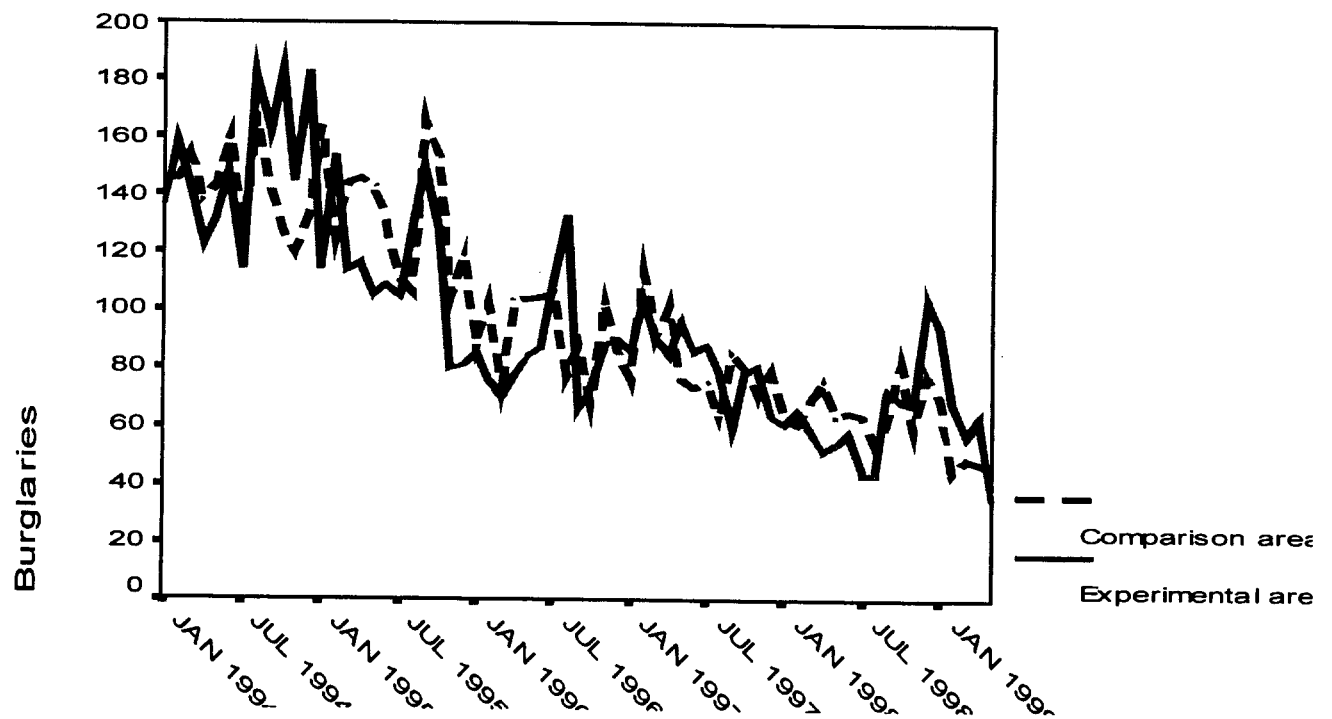


Figure 23
San Diego Residential Burglaries
January 1994 - May 1999



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These sequence charts portray the general downward trend of burglaries in all three of the study cities in both pairs of areas: experimental and comparison areas. The downward trend is particularly visible in Table 23, the model for San Diego. The sequence charts also reveal that fairly comparable comparison areas were selected for experimental and comparison areas: the numbers and direction of burglary offenses track fairly well between two different geographic areas within each of the three cities.

Estimation models using ARIMA for the three cities failed to reveal any significant impact associated with the treatment. Importantly, this analysis does not suggest that there was no impact associated with the treatment; it suggests only that the models developed were not able *to detect* any significant impact. In hindsight, the absence of statistical impact is not wholly unexpected as there were some limitations to the analytical process. First, the analysis used approximately 48 observation points -- four years of monthly data. This number is really minimal for estimating the structure of correlated errors in a series. Secondly, a short time series requires an abrupt or prompt impact associated with implementation of the treatment. As the experimental treatment was designed by police during the course of the study, it became clear that a prompt impact was implausible. For example, analysis of repeat victimization in San Diego indicated that the treatment would have to be administered (i.e., advice offered) *and* implemented (i.e., preventive measures taken) within two days of the initial burglary in order to prevent subsequent offenses from occurring. While victims in Dallas and Baltimore had a longer window in which to receive and implement preventive measures, this longer window would have created a lag effect of up to several months before an impact of the initiative could be observed.

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Third, in point of fact, the treatment in each of the sites was conceptualized as the police delivery of the services -- advising victims, conducted a crime prevention survey, marking property. For purposes of analysis, the treatment should have been conceptualized as *change in behavior* following the advice and security survey. Only if the initial victims had altered their behavior could there be any substantial anticipation of reduction in serial offenses. While the victim survey in Dallas (discussed in the next section), suggests that most of the victims in the experimental area received police advice and many had a security assessment carried out, survey results suggest that victims in the comparison area were about as likely as victims in the experimental area to make any changes in behavior.

Lastly, the experimental treatment was not as substantial as had been anticipated. Although police were provided with detailed information about more substantive burglary crime prevention initiatives carried out in other jurisdictions, police in the three study cities were not provided with any additional resources to purchase burglary detection hardware, pay for overtime, or any other crime prevention techniques. The treatment was conceptualized as a problem-solving effort, in which police would carry out the experimental initiative within their existing resources -- or perhaps use initiative to tap resources outside the normal police purview.

In developing the experimental treatment, police also had little information about the nature of repeat victimization in the experimental area. Although the research team had detected evidence of repeat victimization, issues of refining the definition of repeat victimization and making distinctions between single-family and multi-family addresses remained to be resolved. Thus, police teams developed the treatment based on good faith recognition of the repeat victimization phenomenon but with very little explicit documentation. Indeed, the burglary

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analyses in each experimental area provided little guidance on developing unique responses. Despite a detailed examination of area level factors, temporal analyses, property stolen and so forth, no compelling story emerged about the nature of burglaries in the experimental areas. This is a key assumption of problem-solving -- that analysis of problems will point police to an appropriate response. The large geographic areas tackled by police in each city probably should have been pared down as dissimilar burglaries in quite different areas were analyzed together and a single response developed for application to all burglary victims. As we have reported the distinctions between single-family and multi-family housing stock, this may have provided an avenue for further data reduction which may have illuminated the burglary problems more clearly.

Victim survey

The primary method of documenting repeat victimization was the address-matching task in this study which analyzed official police records. However, not all offenses are reported to the police and it is well known that underreporting of crime is prevalent. An estimated 50 percent of residential burglaries go unreported to police, a rate that is even higher in high crime areas. Indeed, there are indications that reports of serial victimization are even more likely to be unreported. For example, a victim may report a first offense but, believing that police can do little to solve the crime or having no insurance, be less likely to report subsequent crimes. Alternatively, it is possible that repeat victims may be over-represented in reported crime – these victims may be more willing to report crime after they have been victimized multiple times.

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To overcome some of the limitations of reported police data, official police records were augmented with a telephone survey of victims who reported being burglarized during the treatment period. Follow-up surveys of victims were conducted in each of the three cities, in both treatment and comparison areas.

The surveys were conducted after the first reported burglary in order to follow-up the reported victimization – e.g., "Have you been burglarized again in the last two months?" The survey included questions relating to revictimization such as tenure of residence, dwelling type and location, owned or rented, and proximity to alleys. Interviews with victims were conducted by telephone.

The survey also provided an opportunity to monitor implementation or recollection of the experimental treatment -- predominately consisting of advice from police -- and compliance by victims. Victims were asked if they had been informed about risks of a repeat offense, whether a security survey had been conducted, and whether they had changed behaviors complying with crime prevention advice.

The survey process began two months after the implementation of the treatment and continued throughout the treatment period and for two months after the treatment period ended. The time lag was intended to capture the time period in which revictimization was most likely to have occurred. Any longer lag may have raised the issue of memory fallibility of respondents, who, if victimized twice in preceding months may have had difficulty separating the events. Different but quite similar instruments were used in each of the three study sites. A copy of the survey instrument from Dallas is included in the appendices as Attachment A.

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Administration of the survey was carried out under contract in each of the three study cities. Response rates varied substantially. In Dallas, a sworn crime prevention officer carried out the survey (off-duty) and generated the highest response rate: of 1,075 offenses, 275 and 278 respondents respectively in the experimental and comparison areas of Dallas were surveyed -- an overall response rate of 51 per cent. In San Diego and Baltimore, the surveys were administered by civilians who obtained much lower response rates: 8 percent or 129 responses from 1,520 offenses in San Diego; 8 percent or 119 of 1,512 offenses in Baltimore. Indeed, the low response rate in the latter two cities does not permit reliable statistical analysis, however, some descriptive findings from these two sites are reported. The low responses were attributed to persons having telephones disconnected related to moving, or not having telephones in the residence.

Survey procedures and survey population in Dallas

In the City of Dallas, there were 484 reported offenses during the 12-month period in the experimental area (200s beats) and 620 offenses in the comparison area (500s beats) during the same period. All victims of burglaries were called two months to two months and 10 days after their reported offense. Multiple attempts were made to reach victims during this time frame, by calling the phone number provided on the offense report. The survey attained a response rate of 57% (275) for the experimental area, and 45% (278) for the comparison area.

Non-responses were analyzed for differences to determine any systematic differences between the population and the respondents. No significant differences were identified by examining sex, race and age -- variables for which population parameters were available.

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The survey did reveal distinctions between the experimental group and the comparison group. The most noteworthy distinctions were those of race, and housing characteristics (See Table 24). In general, the victim population in the experimental area consisted of a relatively larger number of white and African American victims, while the population of the comparison area included a larger proportion of Hispanics. The areas were comparable in terms of other demographic characteristics such as age and gender. Survey responses, however, indicated that victims in the experimental area were more likely to rent an apartment (76%), while victims in the comparison area were more likely to own their own home (44%) than victims in the experimental area (24%). Consistent with the ownership indicators, victims in the experimental area reported living in their residence for a shorter period of time: on average, respondents in the experimental area had lived at the residence for four years while respondents in the comparison area had lived in the residence for nearly seven years.

Offense characteristics in the two areas were similar. Very few of the offenses in either the experimental or comparison area were cleared through arrest. In the experimental area, 4% (26) of reported offenses resulted in arrest, while 92% (444) yielded no arrest. An additional 5% (23) of offenses were cleared through exception. In the comparison area, 91% (565) resulted in no arrest, while 4% (26) were cleared through arrest. As described previously, not all burglary calls for service in Dallas generate a uniformed response. In this study, a uniformed officer was dispatched 50% (243) of the time in the experimental area, while in the comparison area, a uniformed officer was dispatched to 63% (392) of the reported burglaries. In the remainder, the call was handled by a call taker in a telephone reporting unit (TRU).

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Survey respondents were victims who were called at the home telephone number listed on the offense report. Typically, these persons were the victim, although the complainant may have been a member of the family or someone else. Sex, race, age and offense information was taken from the offense report while other data reflects survey responses.

Table 24
Characteristics of Burglary Complainants
Based on Offense reports

	Experimental area	Comparison area
Gender	56% female (268)	51% female (309)
Race	51 % white (246) 38% African American (185) 5% Latino (23) 6% Other (26)	36% white (222) 19% African American (119) 44% Latino (274) 1% Other (5)
Age	25% age 25 or less 35% age 26-35 24% age 36-45 average age 34	20% age 25 or less 31% age 26-35 44% age 36-45 average age 38
Years at address*	4.2 years average 41% 12 months or less	6.9 years average 25% 12 months or less
Ownership/rental*	24% (66) own 76% (209) rent	44% (121) own 56% (154) rent

* From survey responses

Survey findings: Dallas

Many of the burglary victims -- in both experimental and comparison areas -- reported that they had been victimized in either the year preceding the burglary or within the two months following the reported burglary. Indeed, nearly an identical number reported being burglarized in the year prior as in the two months subsequent. This finding from the victimization survey reflects the projected time course for repeat victimization -- that is, the repeat occurrence of a burglary is likely to occur quite rapidly. After the two month window of vulnerability closes,

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the likelihood of victimization for a victim is roughly the same as for a family or household which has not been burglarized.

Table 25
Related victimization

	Experimental area	Comparison area
Burglarized in prior 12 months	8% (12)	10% (28)
Burglarized in subsequent 2 months	6% (17)	8% (23)
Neighbors burglarized also	57% (92)	63% (107)

A large proportion of victims reported that their neighbor had also been burglarized since the victim's burglary although 40% of respondents in each area didn't know whether their neighbors had been burglarized or not. Of those victims who knew, 57% in the experimental area and 63% in the comparison area reported that their neighbors had been burglarized since their burglary. And 79% (62) of these respondents in the experimental area said the burglary had occurred within a day or two of their own burglary. The reported incidence of nearby or neighbor burglaries to reported burglaries gives weight to the concept of near repeats, described previously.

Consistent with other studies, not all of the victimization -- prior or subsequent -- was reported to police. In the experimental area, 81 % (13) of survey respondents reported a subsequent burglary, according to the survey. This finding is consistent with studies which indicate that persons experiencing multiple victimization may be less likely to report subsequent victimization to police. Since so few of the offenses are cleared through arrest (about 5 % in

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each of the areas in this study), victims may lower their expectations of police service. The number of victims reported subsequent victimization is too small for statistical analysis.

About 10% of victims in each of the areas reported recovering some of the property lost through the burglary while a third of victims (33% in each area) reported having insurance to cover losses related to the burglary. By the time of the survey (two months after the burglary), 39% (105) and 37% (101) of victims, respectively in the experimental and comparison areas, reported replacing some of the property that was stolen.

A large proportion of burglaries of neighbors also occurred within a short amount of time. In the two areas, more than a third of respondents reported that their neighbors had also been burglarized. Among respondents in the experimental area, 79% (62) of respondents said this burglary had occurred within a day or two of their own burglary. Another 14% (11) said the burglary of their neighbor occurred within a week or two of their own burglary.

Based on the recollections of victims -- an imperfect measure of implementation -- complainants were asked about how the police responded to their burglary. Among the questions, respondents were asked about whether elements of the experimental treatment had been carried out: did the police dust for prints, canvass neighbors, warn about the likelihood of a repeat occurrence, provide written crime prevention information, and offer a security check. For every category of police service, there was a significant difference between the amount of police services received in the experimental area and the amount received in the comparison area. These findings suggest that implementation of the experimental treatment was fairly consistent in Dallas, that is, the burglary victims received the experimental treatment package developed. The

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finding also offers some validation to the police perception that one routine police practice for burglary investigation -- a canvass of the neighbors -- is rather routinely overlooked.

Table 26
Recall of police activities

	Experimental	Comparison
Police dusted for fingerprints*	51% (244)	42% (259)
Police contacted neighbors	44% (121)	13% (35)
Police warned of likelihood of repeat	72% (196)	20% (56)
Police provided written info about prevention	70% (191)	3% (9)
Victim requested home security check	54% (252)	1% (4)
Victim received home security check	54% (255)	2% (5)

*From offense report

Another practice assumed by police as a common response to a burglary -- that some elements of crime prevention advice are routinely offered to victims -- also appeared minimal in the comparison area. In the comparison area, only a handful of victims recalled receiving any advice from police. A total of 96% (264) respondents in the comparison area could not recall receiving any advice from police or didn't know.

In contrast, 60% (152) of respondents in the experimental area reported receiving advice from police. The victims in this area recalled receiving a wide range of advice. The advice most often recalled involved changing locks, keeping windows and doors closed and locked, improving lighting or leaving lights on and having property engraved. Victims typically recalled three to seven elements of advice from police.

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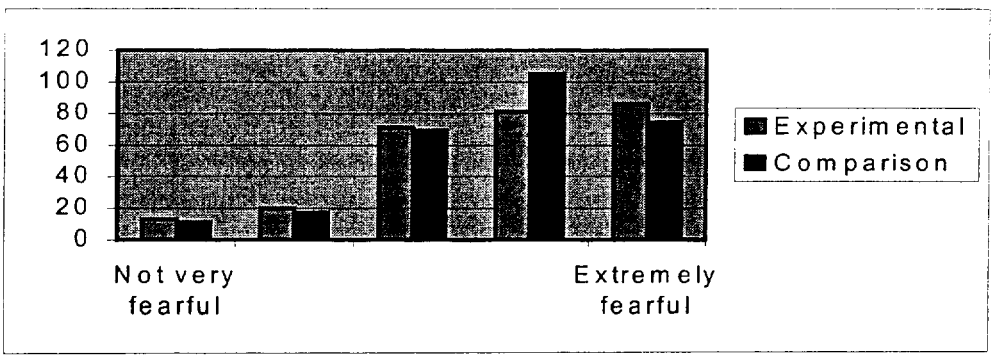
For purposes of the study, recall of advice provides a measure, albeit imperfect, of the extent to which the experimental treatment -- police advice -- was implemented. More important for the prevention of subsequent burglaries, however, is an examination of whether the receipt of advice resulted in any change of behavior. Were the victims in the experimental area more likely to implement burglary reduction strategies?

The literature suggests that heightened fearfulness may contribute to changes in behavior. In other words, victims who are more fearful may be more likely to implement crime prevention advice. Victims in both areas reported high levels of fearfulness following their victimization experience. Consistent with victimization research, victims reported being highly fearful after the occurrence of their burglary. There were no significant differences between fearfulness between victims in the experimental and comparison areas. Victims in the experimental area were slightly more likely to report the highest level of fearfulness, ranking their fearfulness at 10 on a scale of 1 to 10 (See Figure 24).

Figure 27
Fearfulness After Burglary: Dallas



The most commonly reported response to being burglarized was to move away froomthe burglarized dwelling. And victims in the experimental area were more likely to report moving as

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a response to the burglary than were victims in the comparison area. A total of 27% (59) victims in the experimental area reported having moved or planning to do so, while 11% (24) in the comparison stated this as a response to their burglary. This greater likelihood to move may be associated with the information provided by police -- eg, the likelihood of being revictimized at that address -- or may be an artifact of ownership, as more victims in the experimental area are renters than owners. Clearly, homeowners cannot move as easily as renters. Similarly, victims in the comparison area were slightly more likely to install alarms than were victims in the experimental area (see Table 27).

Table 27
Crime prevention strategy adopted

	Experimental area	Comparison area
Implemented any crime prevention strategy*	87% (219)	83% (215)
Alarms (install, repair, use)	13% (28)	17% (37)
Moved or moving	27% (59)	11% (24)
Boarded windows	9% (20)	14% (30)
Changed locks, installed locks, added deadbolts	18% (39)	23% (50)

* includes implementing advice from police and other ways of protection

Victims in both areas also adopted a number of other strategies including having property engraved, getting a gun, getting a dog, or installing burglar bars.

Burglary victims in this study were not highly satisfied with police services; victims in the experimental area expressed somewhat greater satisfaction with police service than those in the comparison area. In general, victims in the experimental area received more police services

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than victims in the comparison area -- services such as written information, follow-up telephone call, contact with the crime prevention officer, offer of a security check and so forth.

This level of satisfaction, however, may be related to whether the initial burglary was responded to by a uniformed officer. (See Table 28.)

Table 28
Rating of Police Service by Area and Service

	Excellent or Good	Fair or Poor
Sworn officer	51% (120)	49% (115)
Call taker/TRU	37% (98)	63% (165)

Although the number of burglaries cleared through arrest in this study was quite small -- consistent with national clearance rates, victims were somewhat more likely to rate police as excellent or good if their burglary resulted in an arrest. (See Table 29.) There were no distinctions in rating of police by experimental or comparison area, although one may have anticipated higher ratings in the experimental area.

Table 29
Rating of Police Service by Burglary Outcome

	Excellent or Good	Fair or Poor
Arrest	63% (15)	37% (9)
No arrest	40% (195)	60% (295)

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Survey Results: Baltimore and San Diego

Despite the extremely low response rate, survey findings from Baltimore and San Diego tended to parallel the findings from Dallas. In Baltimore, differences in responses between the experimental and comparison areas tended to indicate that police had in fact administered at least some aspects of the experimental treatment. Few victims recalled any mention of a home security check and few took advantage of having property engraved. Only one person in the experimental area took advantage of purchasing discounted materials through the Loading Dock to secure their dwelling.

Table 30
Recall of police advice: Baltimore

	Experimental	Comparison
Dusted for prints	48% (58)	56% (14)
Contacted neighbors	35% (42)	24% (6)
Warned of repeat	36% (44)	8% (2)
Provided written info	46% (56)	4% (1)
Property engraved	11% (11)	0% (0)
Received home security check	2% (1)	2% (1)

Victims' recollection of advice in San Diego followed a similar pattern: victims in the experimental area were slightly more likely to recall police providing a warning of repeat victimization, providing written information, contacting neighbors and dusting for prints. A portion of victims in the comparison area also recalled receiving these services. As there were

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no measures in place to *prevent* these activities from occurring in the comparison area, these cells provide some descriptive information about basic delivery of police crime prevention services in San Diego.

Table 31
Recall of police advice: San Diego

	Experimental	Comparison
Dusted for prints	55% (58)	51% (49)
Contacted neighbors	63% (67)	41% (41)
Warned of repeat	23% (36)	20% (20)
Provided written info	41% (36)	12% (10)
Requested home security check	20% (21)	5% (5)
Received home security check	37% (39)	17% (16)

Victim compliance with crime prevention advice appeared to be somewhat low in both of these jurisdictions. This compliance may be related to victims not being particularly fearful after the offense occurred. Although a portion of victims in Baltimore and San Diego (see figures 25 and 26) were extremely fearful after the burglary, many victims reported low to moderate levels of fearfulness. This observation is in contrast to Dallas (Figure 27), in which higher levels of fearfulness were associated with victimization. The low response rate in Baltimore and Dallas permit only a statistical comparison of these observations.

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Figure 25
Fearfulness in Baltimore

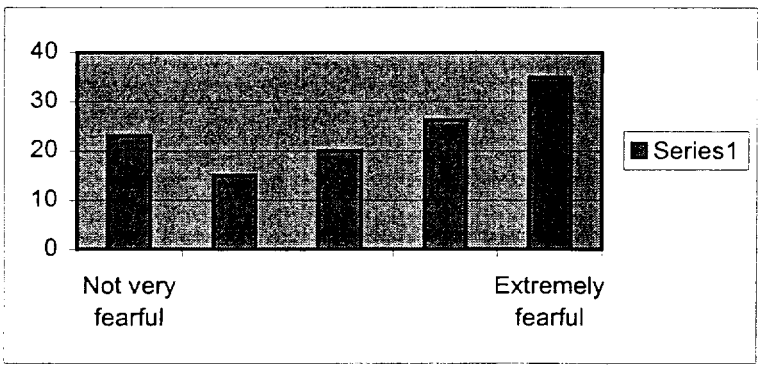
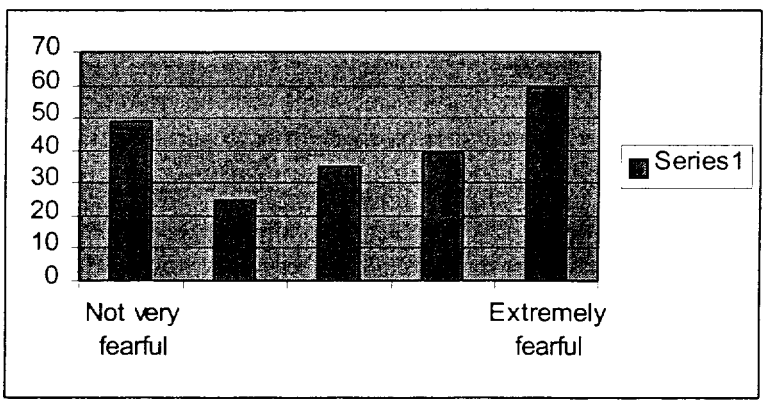


Figure 26
Fearfulness in San Diego



Victim behavior -- that is, the adoption of measures to prevent subsequent victimization -- also appeared lower in Baltimore and San Diego than in Dallas. Indeed, the most common response in Dallas' experimental area was moving away from the burgled dwelling. This response was mentioned three times in San Diego and once in Baltimore. While it is unfortunately that a larger and representative sample was not obtained in San Diego and Baltimore, the survey responses suggest that victim responses to burglaries may be localized,

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reflecting housing characteristics (ownership v. rental), economic conditions (including alternative housing choices), and other factors.

The Problem-Solving Process in Three Cities

To carry out the problem-solving process which was a key element of this research study, police in each city were initially provided with information about crime prevention techniques, including innovative and successful methods used in other venues to address residential burglary. However, police were not provided with any additional revenue for purchasing crime prevention or intervention tools. In each city, police focused their attention of burglary-handling practices within the organization -- perceived shortcomings in the initial investigation, service gaps between the initial response and the follow-up investigation carried out by detectives. Problem-solving groups in each agency concluded that conducting better preliminary investigations was critical in terms of the police response to burglaries – despite information about repeat victimization. As a consequence, each agency adopted measures which increased the emphasis on residential burglaries, including providing feedback to officers on case outcomes. Each agency urged officers to include more detail in their reports, examine scenes for possible evidence, and ensure they conduct neighborhood canvasses.

In addition, development teams agreed that officers, victims, and neighbors should be made more aware of the victims' increased vulnerability after a burglary. And the problem-solving teams also agreed that more direct target hardening and crime prevention advice and/or services should be provided to victims of residential burglaries. These three objectives emerged independently in each city's problem-solving process. Police teams in each of the three cities approached these goals in different ways.

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The burglary-handling practices of police were questioned in each study city. Prior to the project, in San Diego and Baltimore, when a citizen called police to report a burglary an officer was sent to the residence to investigate and take an offense report. In both cities officers also were supposed to conduct a neighborhood canvas to locate possible witnesses, etc. In San Diego, patrol officers carried basic evidence collection equipment (fingerprint powder, tape, Polaroid camera, etc.) allowing them to process the scene. In Baltimore the officer examined the scene to determine if there was a need to have an evidence collection expert respond. In Dallas, when a victim called in a burglary, it was handled in one of two ways. If the burglary was not in progress (patrol cars were dispatched immediately on these), the reports may be taken over the telephone by a non-sworn member of the department -- the Telephone Reporting Unit. In about 50 percent of the cold burglaries, patrol officers were dispatched to the scene to take a report because the telephone report takers were too busy and the time the victim would have to wait to report the office is considered too long. As in the other two cities, officers in Dallas were supposed to conduct a neighborhood canvas. As in Baltimore, the officer then decided if an evidence technician should respond to collect evidence. In all three cities, after the preliminary report is taken, the offense report is reviewed by a supervisor and then either suspended for lack of leads, sent on to an officer or investigator for follow-up investigation.

Project Implementation

The problem-solving efforts developed and implemented by police personnel in each city were relatively weak. The provision of target hardening or other crime prevention advice to the

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victim was a very hit-or-miss proposition—depending on the knowledge, interest, and motivation of the officer taking the report. Some police officers involved in the project were concerned about heightening fear of victims. These concerns may have mitigated their carrying out of warnings to victims. The victim survey in Dallas indicated that police in the experimental area did provide advice to residents. Of course, these residents appeared more likely to move away from the neighborhood. The fearfulness scale does not indicate that they were significantly more fearful that victims in the comparison area; perhaps, one can deduce that victims were more practical or more realistic and chose an option to reduce their likelihood of revictimization. Indeed, their reaction may have been an unintended consequence of providing advice to victims.

Summary: Increased Risk of Victimization

The importance of repeat victimization as a criminological phenomenon is its potential contribution to improving police effectiveness and reducing aggregate crime. Of course, what police and victims want to know are the practical implications of repeat victimization. In other words, what does being burglarized once suggest about future risk of victimization? The primary research finding in this study confirms that being victimized once substantially increases the risk of being victimized again.

Table 31
Burglaries in Single-Family Dwellings
Proportion of Repeats

	Baltimore most burgled areas	Baltimore Citywide burglaries	Dallas most burgled areas	Dallas citywide burglaries	San Diego most burgled areas	San Diego citywide burglaries
Number of burglaries	1008	8231	1329	9243	250	1646
Number of addresses burgled	859	7278	1182	8279	236	1583
Repeat burglaries as proportion of all burglaries	14.8%	11.6%	11.1%	10.4%	5.6%	3.8%

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Table 32
Burglaries in Multi-Family Dwellings
Proportion of Repeats

	Baltimore most burgled areas	Baltimore citywide burglaries	Dallas most burgled areas	Dallas citywide burglaries	San Diego most burgled areas	San Dieg citywide burglaries
Number of burglaries	529	1915	1536	6191	499	3339
Number of addresses burgled	340	1381	483	2843	444	2972
Repeat burglaries as proportion of all burglaries	35.7%	27.9%	68.6%	54.1%	11.0%	11.0%

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CHAPTER V:
SUMMARY AND DIRECTIONS FOR FUTURE RESEARCH

Identifying repeat victimization provides a direct mechanism to focus limited police resources on likely victims in an effort to deter and/or apprehend offenders. In doing so, the most victimized persons or places are protected and the incidence of crime overall is reduced (Pease 1991, 1998; Farrell and Pease 1993; Bennett and Durie 1996). In practice, however, there are difficulties in identifying the incidence and nature of repeat victimization.

While studies of repeat victimization have provided much information about the incidence and concentration of crime, there are certain research complexities that have obscured the importance of the phenomenon to the police in the United States. For example, despite the international focus on repeat victimization, little research on the subject has been carried out in the United States. Among American studies, Sorenson et al. (1991) looked at repeated sexual victimization and Lauritsen and Quinet (1995) examined repeat victimization among teens and young adults. The examination of repeat residential burglary in three cities, described in this report, provided evidence of the repeat phenomenon including differences by housing density and type (Stedman 1998; Weisel and Stedman, 1998a, 1998b, 1998c). Other studies have examined hot spots of crime (see, for example, Sherman 1989, 1995; Block and Block 1995; Spelman 1995), but there has been scant attention to the "hot dots" within those "hot spots."

Despite considerable research on repeat victimization abroad, those studies have not made cross-sectional comparisons across different places and crime types. Instead, the focus has been limited to specific crimes, such as burglary (Forrester, et al. 1988; Forrester et al. 1990; Polvi 1990; Pease 1991; Bennett 1995; Tseloni and Pease 1996; Osborne, et al. 1996; Bennet and Durie 1996; Guidi et al. 1997; Mukherjee et al. 1997). Other studies have been parochial,

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focusing on single locations (Forrester et al. 1988; Polvi 1990; Anderson et al. 1995), while several have examined aggregate national crime survey data (Trickett et al. 1992, 1993; Chenery et al. 1995; Ellingworth et al. 1995; Osborn et al. 1996; Mukherjee et al. 1997). These research foci have obscured variations in repeat victimization in different places.

In addition to research limitations about repeat victimization, police officers at all levels are often skeptical about the existence of repeat victimization, largely because of inadequate crime data/computer systems and the working practices of their departments (Pease 1996). Police offense data is often of poor quality and have inadequate data classifications (Farrell and Pease 1993; Ellingworth et al. 1995; Weisel and Stedman 1998a, 1998b, 1998c).

This report details how there are often errors in the recording of data on police reports and/or the entry of that data into the automated system, and unreliable and inconsistent data entry practices making it difficult for the police data systems to identify repeat victimization of the same address or same person. Police also face difficulty in assigning a specific location to an incident. Many offenses—especially for some crime types—occur in open spaces, rather than at a specific address, making it difficult to assign a location—a unique address—to the offense for purposes of analysis. Crime data is often grouped into aggregate categories for statistical reporting, obscuring differences in types of offenses and information on offense locations such as building or apartment numbers for multi-family dwellings.

The working practices of police agencies also compromise recognition of repeat victimization. Most police data systems record and report incidents as independent events (Pease and Laycock 1996; Bridgeman and Hobbs 1997; Pease 1998). Because the police work in shifts, it is unlikely that individual officers will be able to link repeat incidents easily. Crime analysts,

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on the other hand, typically look for weekly or monthly trends in crime so that they can assist officers in responding quickly to emerging problems. A longer time window, however, is useful to identify repeat victimizations. In fact, most researchers studying the phenomenon recommend that analysis include at least six months to one year of data to successfully document its occurrence (Farrell and Pease 1993; Pease 1995, 1996; Bridgeman and Hobbs 1997; Pease 1998). While some shorter periods may be suitable for some types of crime -- such as residential burglaries in San Diego because of the exceptionally short time period between offense and repeat -- most detection of repeat victimization will require the longer window of examination.

Police are not alone in overlooking the repeat victimization phenomenon. Even when data are available, the presence of a repeat problem may be missed. For example, researchers in one U.S. city who reported that "burglary is primarily a single-address phenomenon since 81.52% of all the victimized addresses and 61.1% of all the burglaries involve just one call to a single address" (LeBeau and Vincent 1995). Using data they display, one-time victimizations occurred at 6,616 addresses—about 61% of the jurisdiction's 10,828 burglaries in 1990. But the remaining 39% of burglaries—4,212—occurred at addresses with two or more burglaries during the calendar year. This is a significant amount of repeat victimization.

Despite the complexities of understanding repeat victimization, research in this area shows great promise for crime reduction (Forrester et al. 1988; Anderson et al. 1995; Bennett and Durie 1996). Reported offenses—a ready source of information for police—can be used to identify the incidence and concentration of repeat victimization. Such analysis provides guidance for developing effective police interventions including the application of specific crime prevention tactics on those most likely to be victimized. This specific-deterrence model

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conserves scarce police resources, maximizing the potential of police to prevent—hence reduce—crime. Limitations of prior repeat victimization studies demonstrate the pressing need to develop a standardized definition of repeat victimization, to collect reliable data about the incidence of repeat victimization across diverse jurisdictions and crimes, to develop a replicable model for estimating repeat victimization, and to increase the American-based research about this important criminological phenomenon.

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Appendix A
Key elements of experimental treatments

Dallas treatment

- A crime prevention officer was assigned to work specifically on the project and carry out most of the tasks.

- Patrol officers assigned to the experimental area received roll-call training about the project, repeat victimization, the treatment package and the necessity of conducting better preliminary investigations.

- Every victim of a residential burglary in the treatment area is contacted by phone by the crime prevention officer (usually within 24 to 48 hours) and warned of their increased likelihood of victimization and offered a home security check

- Within 24 to 48 hours of the burglary report, the crime prevention officer visits the location of the burglary and conducts a neighborhood canvas to try and locate witnesses and to pass out a warning door hanger. A copy of the door hanger is attached.

- For burglaries in apartment complexes, the crime prevention officer contacts the apartment management to alert them of the burglary and to advise them and their staff (maintenance, security, etc.) of any security measures they can take.

- For repeat offenses in complexes, the crime prevention officer conducts an environmental survey (CPTED) of the apartment complex and makes recommendations for improvement.

- Patrol officers are informed of residential burglaries so they can conduct increased surveillance patrols of victim locations.

- A letter is sent to each victim and to the complex managers, owners and management companies for apartment complexes by the deputy chief of the patrol division. These letters warn of the probability of repeat offenses and encourage participation in taking steps to reduce burglaries. Owners of single family residences also received letters that described the probabilities of a repeat offense.

- Officers are provided with feedback on the project through roll calls and ride-alongs by project staff.

Baltimore treatment program

- Officers assigned to the experimental area received roll-call training about the project, repeat victimization, the treatment package and the necessity of conducting better preliminary investigations.

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- When officers take a residential burglary report they provide the victim with a card warning them of their increased vulnerability, providing advice on securing and protecting their residence, and urging them to have a home security check.

- Victims are allowed to become a member of a co-operative and qualify for reduced costs for such items as plywood, locks, and other materials used to secure a residence. A copy of the text of this card is attached.

- Patrol officers examine the crime scene to determine if there is a need for the evidence collection team to respond.

- Responding officers canvass the neighborhood and provide neighbors with a card alerting them that a burglary has occurred in their neighborhood. The card provides crime prevention tips, asks them to call the police if they have any information, and urges them to get a home security check. If a neighbor is not home when the canvass is conducted, the officers leave the card in the mailbox or under the front door. A copy of the text of this card is attached.

- A copy of the offense report is sent to the Major Crimes Unit in the patrol district and assigned to an investigator.

- Investigators contact victims within 24 to 48 hours of the burglary tof offer to mark proand asks the if they would like to have a officers record the serial numbers on any property remaining in their home. They are also asked if they have been the victim of a burglary at the same address within the past 12 months, and if so, did they report it to the police.

- If victims do want their remaining property recorded, an officer assigned to Major Crimes' is sent to do this.

- Each week the Major Crimes Unit prepares a listing of the residential burglaries that have a occurred in the previous four weeks and distributes this to the patrol officers. Patrol officers are expected to make special checks on these residences and record those checks on their daily activity logs. These logs are turned into the officers' sergeant each day and reviewed.

- Officers are provided with information on the project through roll call visits and ride-alongs.

San Diego treatment program

- Patrol officers assigned to the experimental area received roll-call training about the project, repeat victimization, the treatment package and the necessity of conducting better preliminary investigations.

- Patrol officers or non-sworn Community Service Officers (CSO) are dispatched to take preliminary reports in all residential burglaries. The patrol sergeant on duty is also notified of the call so that he/she can monitor the quality of the investigation.

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- Responding officers canvass the neighborhood and process the crime scene. The officer is to inform the victim of their increased vulnerability of repeat burglaries.

- A copy of the offense report is forwarded to a sworn Community Relations Officer (CRO) or CSO assigned to crime prevention duties for the service area in which the burglary occurred. Within one week of the burglary, the CRO/CSO contacts the victim by telephone offers a home security check. If requested, the CSO/CRO conducts this check.

- A copy of the offense report is provided to the Retired Senior Volunteer Patrol (RSVP) for the area. RSVP visits each burglary location and delivers a crime prevention brochure to the victim and immediately surrounding neighbors.

- If an address is burgled more than once, a detective visits the location and conducts a CPTED evaluation.

- A biweekly report of burglaries is provided to the patrol officers, who are requested to provided increase patrol surveillance at those locations.

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Appendix B

Attachment
Dallas Door Hanger

Don't be a Victim!

On _____ a nearby residence was burglarized. In this area, 2 in 5 residential burglaries occur at locations that have been burglarized before. Chances of a second burglary are greatest during the 2 months after the first crime. To help you protect yourself from becoming a victim, the Dallas Police Department offers the following suggestions:

- **Report all suspicious activity to 911. Do NOT attempt to stop the crime yourself.**
- **Contact the Dallas Police Department for free home security surveys and crime prevention tips.**
- **The Dallas Regional Crimestoppers will pay up to $1000.00 for information that leads to the arrest AND indictment of individuals involved in the commission of a burglary (or any felony offense). Call (214)-373-TIPS (8477) with any anonymous tip.**

Answers to any questions about these services can be obtained by contacting the Dallas Police Department at 214-670-7766 or visit the DPD home page at *www.airmail.net/dpd/.*

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APPENDIX: DALLAS VICTIMIZATION SURVEY

Survey date _____
Police offense report number _____
Date/call history _____
Victim name _____
Victim address _____
Call handled by officer____? or expediter_____? (from offense report)

Dallas Repeat Victimization Project
Victim survey in target and comparison area

Hello, my name is _____. I'm calling on behalf of the Dallas PD. We're doing a study on residential burglaries and want to follow up the burglary incident that occurred at your address in _____(state month). This should take just a few minutes and is completely confidential.

(Be prepared to offer PD phone number where you can be reached if respondent wants verification of your identity. Verify respondent's name and address with above.)

Were you the person in the residence who spoke with police when the burglary occurred? (If not, try to talk to the person who reported the burglary.)

I. Incidence of subsequent victimization

1. How long have you lived at this address? _____ years or _____ months

1a. Is this the address where the burglary occurred?
__1__ Yes (Go to #2)
__2__ No (Go to #1b)

1b. On what date did you move?_____

1c. Why did you move?_____

2. Were you burglarized at any time during the 12 months prior to this offense?
___1__ Yes ___2___ No

2a. If yes, when did the other burglary occur?
_____ Date _____ Time of day

2b. Did you report it to the police?
__1__ Yes (Go to #2d)
__2__ No (Go to #2c)
__3__ Don't know (Skip to #2d)

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2c. Why not? _____

2d. What was taken? (type of property) _____

3. Have you been burglarized *again* since your burglary at this address in _____ (month)?
__1__ Yes (Go to #2a)
__2__ No (Skip to #3)
__3__ Don't know (Skip to #3)

3a. If yes, when did the other burglary occur?
_____ Date _____ Time of day

3b. Did you report it to the police?
__1__ Yes (Go to #2d)
__2__ No (Go to #2c)
__3__ Don't know (Skip to #2d)

3c. Why not? _____

3d. What was taken? (type of property) _____

4. Do you know if any of your neighbors have been burglarized since your burglary? (If needed, explain that you are interested in immediate neighbors, ones you can see from your house.)
__1__ Yes
__2__ No (Skip to #4)
__3__ Don't know (Skip to #4)

a. Do you know about when that burglary occurred at your neighbor's? Was it... (probe)
__1__ Right after your burglary or within a day or two?
__2__ Within a week or two after your burglary?
__3__ Within a month after your burglary?
__4__ Just within the last month?
__5__ Other _____

II. Recollection of advice and compliance

5. Let me ask you some questions about your burglary in _____(original month). (Note: Questions in the rest of survey *only* relate to that original burglary.) After your burglary -- within the first week -- how fearful did you feel? On a scale of 1 to 10, with 1 being *not* very fearful and 10 being *extremely* fearful, what would you say? (Circle response.)

1 2 3 4 5 6 7 8 9 10

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6. Can you tell me what security measures you had in place at the time of the burglary? (Prompt by reading through list)

__1__ Alarm
__2__ Double locks or deadbolts on exterior doors
__3__ Security chain
__4__ Window locks
__5__ Dog in the house
__6__ Lights on or sensor switch
__7__ None
__8__ Other (please list) _____

7. Of these security measures, which ones were *in use* at the time of the burglary? (Prompt by reading items to which respondent said yes in #5)

__1__ Alarm
__2__ Double locks or deadbolts on exterior doors
__3__ Security chain
__4__ Window locks
__5__ Dog in the house
__6__ Lights on or sensor switch
__7__ None
__8__ Other (please list) _____

8. When the police responded to the burglary at your address, did they dust for fingerprints?

__1__ Yes
__2__ No
__3__ Don't know

9. Did the police contact any of your neighbors about the burglary?

__1__ Yes
__2__ No
__3__ Don't know

10. Did the police tell you that you might be burglarized again?

__1__ Yes
__2__ No
__3__ Don't know

11. Were you provided with written information about preventing another burglary at your home?

__1__ Yes
__2__ No
__3__ Don't know

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12. Did you request a home security check to give you advice about preventing another burglary at your home?

__1__ Yes
__2__ No
__3__ Don't know

13. Did the police conduct a home security check for you after the burglary?

__1__ Yes
__2__ No
__3__ Don't know

14. What advice did the police give you about preventing another burglary? (Probe for all responses by asking "Anything else?" Read any unmentioned items on following list as probes.)

__1__ Board up broken window or door (where burglar entered)
__2__ Change locks
__3__ Keep windows/doors closed/locked
__4__ Improve lighting/leave lights on
__5__ Cut shrubs
__6__ Engrave property
__7__ Add security bars
__8__ Add security system/alarm
__9__ Stay home more
__10_ Ask neighbors to watch house
__11_ Don't let strangers in or leave alone in rooms
__12_ Other (Please specify _____)
__13_ Don't know or no advice offered (skip to #15)

14a. Which of those things did you do? (Probe by reading each item checked above.)

__1__ Board up broken window or door (where burglar entered)
__2__ Change locks
__3__ Keep windows/doors closed/locked
__4__ Improve lighting/leave lights on
__5__ Cut shrubs
__6__ Engrave property
__7__ Add security bars
__8__ Add security system/alarm
__9__ Stay home more
__10_ Ask neighbors to watch house
__11_ Don't let strangers in or leave alone in rooms
__12_ Other (Please specify _____)
__13_ Don't know or no advice offered (skip to #15)

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14b. When did you do each of those things? (Repeat only items mentioned above. Note: For each item, record number of response rather than a checkmark.) Would you say you did that...

Right away or within one or two days after the burglary (=1)
Within a week of the burglary (=2)
Within a month of the burglary (=3)
More than a month after burglary (=4)

__1__ Board up broken window or door (where burglar entered)
__2__ Change locks
__3__ Keep windows/doors closed/locked
__4__ Improve lighting/leave lights on
__5__ Cut shrubs
__6__ Engrave property
__7__ Add security bars
__8__ Add security system/alarm
__9__ Stay home more
__10_ Ask neighbors to watch house
__11_ Don't let strangers in or leave alone in rooms
__12_ Other (Please specify _____)

14c. Are you still doing those things that require some effort on your part? (Repeat only items mentioned previously.)

__1__ Board up broken window or door (where burglar entered)
__2__ Change locks
__3__ Keep windows/doors closed/locked
__4__ Improve lighting/leave lights on
__5__ Cut shrubs
__6__ Engrave property
__7__ Add security bars
__8__ Add security system/alarm
__9__ Stay home more
__10_ Ask neighbors to watch house
__11_ Don't let strangers in or leave alone in rooms
__12_ Other (Please specify _____)

15. After the burglary, did you try to protect yourself in any other way?

__1__ Yes
__2__ No (Skip to #15)
__3__ Don't know (Skip to #15)

15a. If so, what did you do to protect yourself? (List all.)

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16. Was any other advice given to you about preventing another burglary in your home?
__1__ Yes (Go to #15a)
__2__ No (Skip to #16)
__3__ Don't know (Skip to #16)

16a. If yes, what advice and by whom?

III. Burglary Outcomes

17. Did you ever recover any of your property that was stolen?
__1__ Yes
__2__ No
__3__ Don't know

18. Did you replace any of the property that was stolen?
__1__ Yes (Go to #17a)
___2_ No (Skip to #18)
___3_ Don't know (Skip to #18)

18a. When?

19. Did you have insurance to cover your losses?
__1__ Yes
__2__ No
__3__ Don't know

20. Do you own or rent your residence?
__1__ Own
__2__ Rent
__3__ Other (describe _____)

21. Is your residence ....
_503_ an apartment or condo (go to #21a)
_501_ a single-family house (go to #21c)

21a. How many floors are there in your apartment or condo building? _____

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21b. *Approximately* how many apartments or condos are there in your building? (Not in the apartment complex.) Would you say there are....(then skip to #20d)

__1__ Fewer than five apartment units in the building,
__2__ Between five and ten units,
__3__ Between 11 and 20 units, or
__4__ More than 20 units?

21c. Is your house... (read through list)

_5011_ detached (that is, a stand-alone house not connected to anything else),
_5012_ semi-detached (such as a duplex or triplex), or
_5013_ attached to other houses (such as a row house)?

21d. Is there an alley behind or beside your house or apartment building?

__1__ Yes
__2__ No
__3__ Don't know

22. In general, how do you feel about the police response to your burglary? Do you feel there was more that the police could have done? If so, what?

__1__ Excellent
__2__ Good
__3__ Fair
__4__ Poor
__5__ No response

Thank you for your assistance.

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APPENDIX:
TIME COURSE TABLES AND GRAPHS

Baltimore
Time Course between Repeat Burglaries in Months

Premise Type		Frequency	Percent	Valid Percent	Cumulative Percent
Single family residence	One month	417	43.8	43.8	43.8
	Two months	137	14.4	14.4	58.1
	Three months	115	12.1	12.1	70.2
	Four months	74	7.8	7.8	78.0
	Five months	53	5.6	5.6	83.5
	Six months	50	5.2	5.2	88.8
	Seven months	47	4.9	4.9	93.7
	Eight months	24	2.5	2.5	96.2
	Nine months	17	1.8	1.8	98.0
	Ten months	7	.7	.7	98.7
	Eleven months	10	1.0	1.0	99.8
	Twelve months	2	.2	.2	100.0
	Total	953	100.0	100.0	
Multifamily residence	One month	245	45.9	45.9	45.9
	Two months	85	15.9	15.9	61.8
	Three months	54	10.1	10.1	71.9
	Four months	43	8.1	8.1	80.0
	Five months	35	6.6	6.6	86.5
	Six months	31	5.8	5.8	92.3
	Seven months	19	3.6	3.6	95.9
	Eight months	7	1.3	1.3	97.2
	Nine months	8	1.5	1.5	98.7
	Ten months	3	.6	.6	99.3
	Eleven months	2	.4	.4	99.6
	Twelve months	2	.4	.4	100.0
	Total	534	100.0	100.0	

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Baltimore
Time Course between Repeat Burglaries in Weeks

Premise Type		Frequency	Percent	Valid Percent	Cumulative Percent
Single family residence	One week	226	23.7	23.7	23.7
	Two weeks	78	8.2	8.2	31.9
	Three weeks	54	5.7	5.7	37.6
	Four weeks	47	4.9	4.9	42.5
	Five weeks	39	4.1	4.1	46.6
	Six weeks	35	3.7	3.7	50.3
	Seven weeks	29	3.0	3.0	53.3
	Eight weeks	29	3.0	3.0	56.3
	Nine weeks	36	3.8	3.8	60.1
	Ten weeks	19	2.0	2.0	62.1
	Eleven weeks	36	3.8	3.8	65.9
	Twelve weeks	28	2.9	2.9	68.8
	More than 12 weeks	297	31.2	31.2	100.0
	Total	953	100.0	100.0	
Multifamily fesidence	One week	130	24.3	24.3	24.3
	Two weeks	43	8.1	8.1	32.4
	Three weeks	33	6.2	6.2	38.6
	Four weeks	27	5.1	5.1	43.6
	Five weeks	30	5.6	5.6	49.3
	Six weeks	24	4.5	4.5	53.7
	Seven weeks	20	3.7	3.7	57.5
	Eight weeks	14	2.6	2.6	60.1
	Nine weeks	15	2.8	2.8	62.9
	Ten weeks	20	3.7	3.7	66.7
	Eleven weeks	8	1.5	1.5	68.2
	Twelve weeks	9	1.7	1.7	69.9
	More than 12 weeks	161	30.1	30.1	100.0
	Total	534	100.0	100.0	

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Baltimore
Time Course between Repeat Burglaries in Days

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Premise Type		Frequency	Percent	Valid Percent	Cumulative Percent
Single family residence	0	48	11.5	11.5	11.5
	1	46	11.0	11.0	22.5
	2	29	7.0	7.0	29.5
	3	29	7.0	7.0	36.5
	4	18	4.3	4.3	40.8
	5	19	4.6	4.6	45.3
	6	18	4.3	4.3	49.6
	7	19	4.6	4.6	54.2
	8	19	4.6	4.6	58.8
	9	9	2.2	2.2	60.9
	10	8	1.9	1.9	62.8
	11	6	1.4	1.4	64.3
	12	13	3.1	3.1	67.4
	13	10	2.4	2.4	69.8
	14	13	3.1	3.1	72.9
	15	6	1.4	1.4	74.3
	16	9	2.2	2.2	76.5
	17	4	1.0	1.0	77.5
	18	8	1.9	1.9	79.4
	19	8	1.9	1.9	81.3
	20	11	2.6	2.6	83.9
	21	8	1.9	1.9	85.9
	22	3	.7	.7	86.6
	23	4	1.0	1.0	87.5
	24	9	2.2	2.2	89.7
	25	12	2.9	2.9	92.6
	26	7	1.7	1.7	94.2
	27	8	1.9	1.9	96.2
	28	4	1.0	1.0	97.1
	29	5	1.2	1.2	98.3
	30	7	1.7	1.7	100.0
	Total	417	100.0	100.0	
Multifamily residence	0	43	17.6	17.6	17.6
	1	20	8.2	8.2	25.7
	2	15	6.1	6.1	31.8
	3	8	3.3	3.3	35.1
	4	17	6.9	6.9	42.0
	5	10	4.1	4.1	46.1
	6	9	3.7	3.7	49.8
	7	8	3.3	3.3	53.1
	8	3	1.2	1.2	54.3
	9	8	3.3	3.3	57.6
	10	7	2.9	2.9	60.4
	11	8	3.3	3.3	63.7
	12	2	.8	.8	64.5
	13	7	2.9	2.9	67.3
	14	8	3.3	3.3	70.6
	15	7	2.9	2.9	73.5
	16	5	2.0	2.0	75.5
	17	2	.8	.8	76.3
	18	4	1.6	1.6	78.0
	19	5	2.0	2.0	80.0
	20	4	1.6	1.6	81.6
	21	6	2.4	2.4	84.1
	22	6	2.4	2.4	86.5
	23	3	1.2	1.2	87.8
	24	2	.8	.8	88.6
	25	3	1.2	1.2	89.8
	26	4	1.6	1.6	91.4
	27	8	3.3	3.3	94.7
	28	1	.4	.4	95.1
	29	6	2.4	2.4	97.6
	30	6	2.4	2.4	100.0
	Total	245	100.0	100.0	

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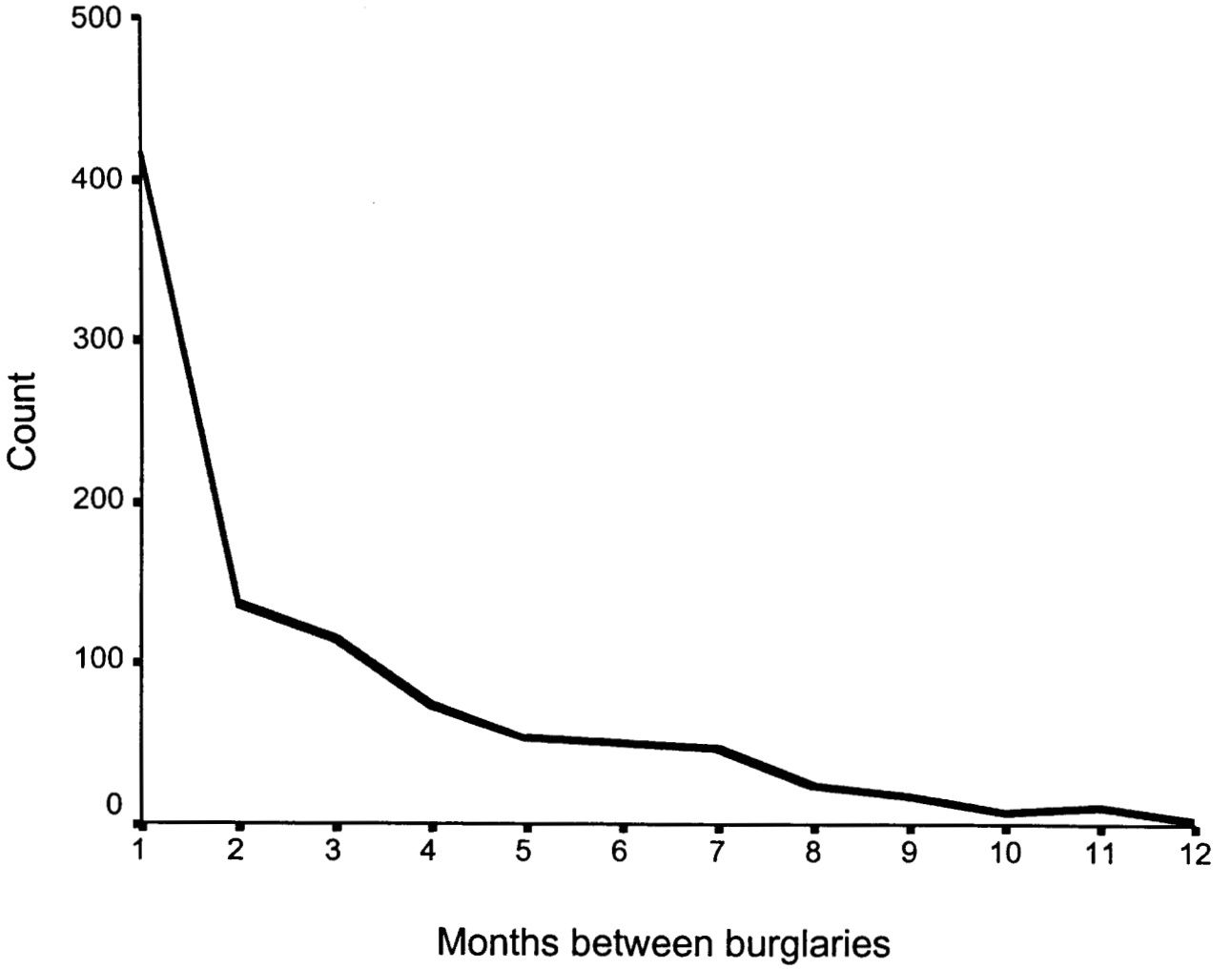
Baltimore
Time Course between Repeat Burglaries
Single Family Dwellings



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Baltimore
Time Course between Repeat Burglaries
Multi-Family Dwellings

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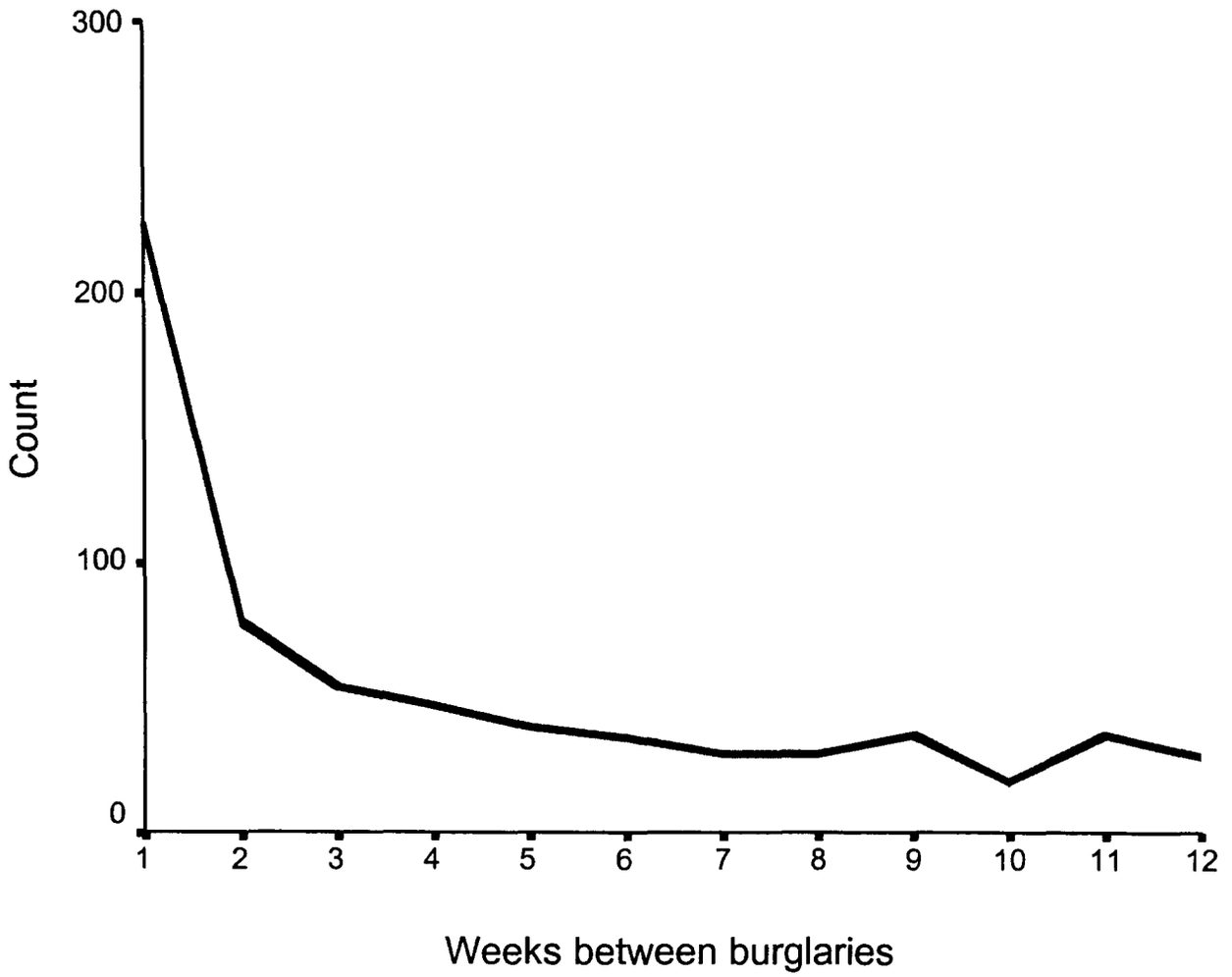
Baltimore
Time Course between Repeat Burglaries
Single-Family Dwellings



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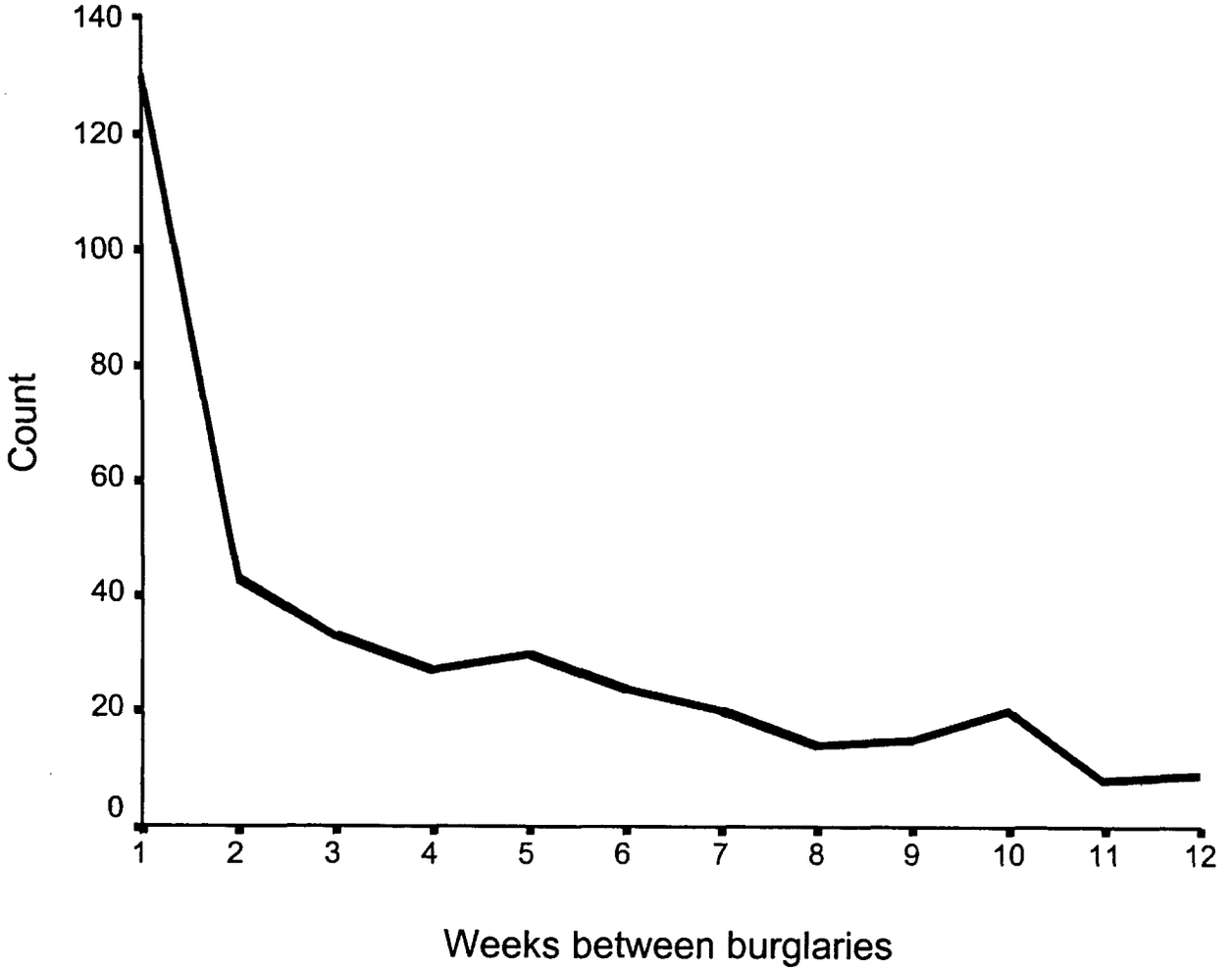
Baltimore
Time Course between Repeat Burglaries
Multi-Family Dwellings



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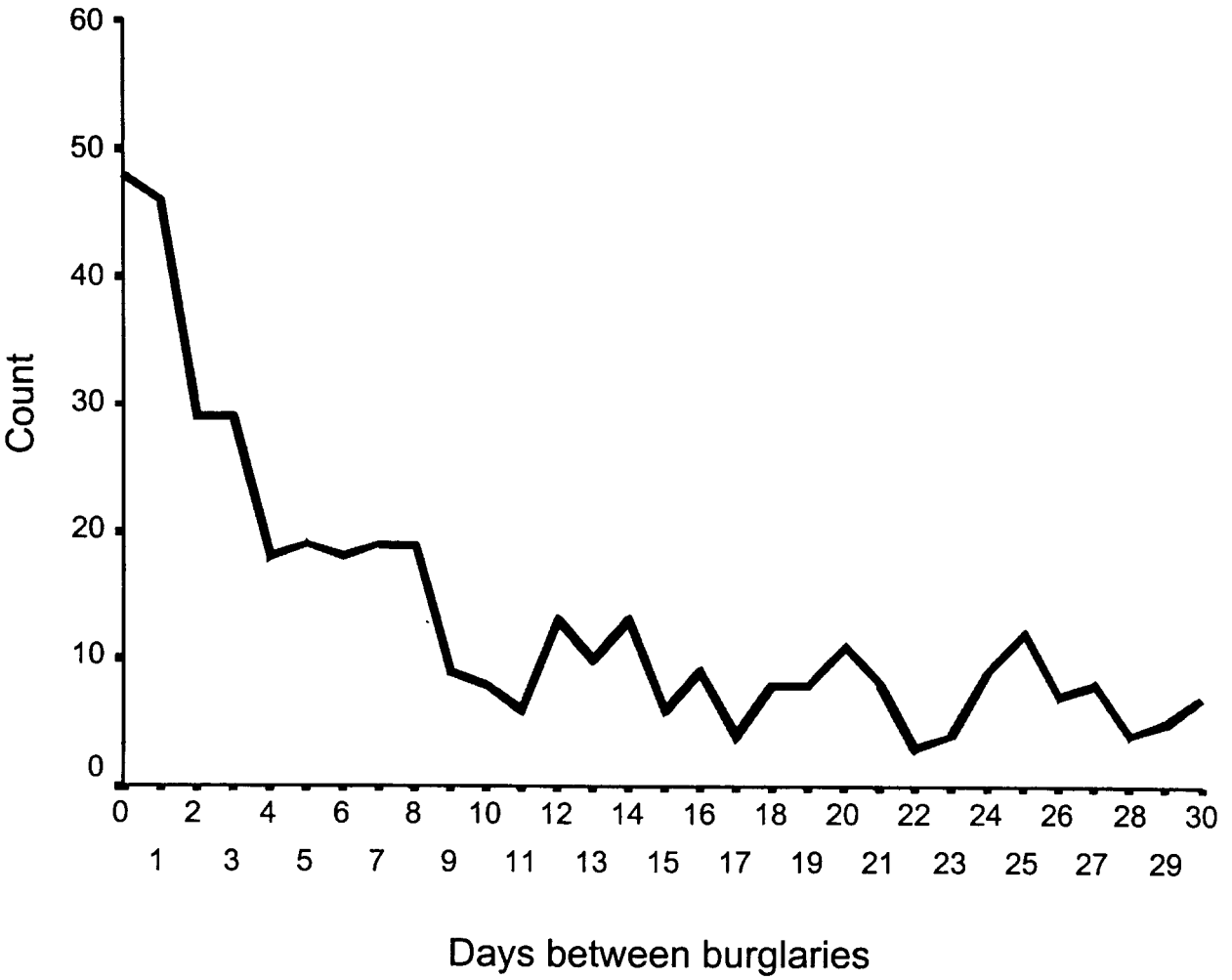
Baltimore
Time Course between Repeat Burglaries
Single-Family Dwellings



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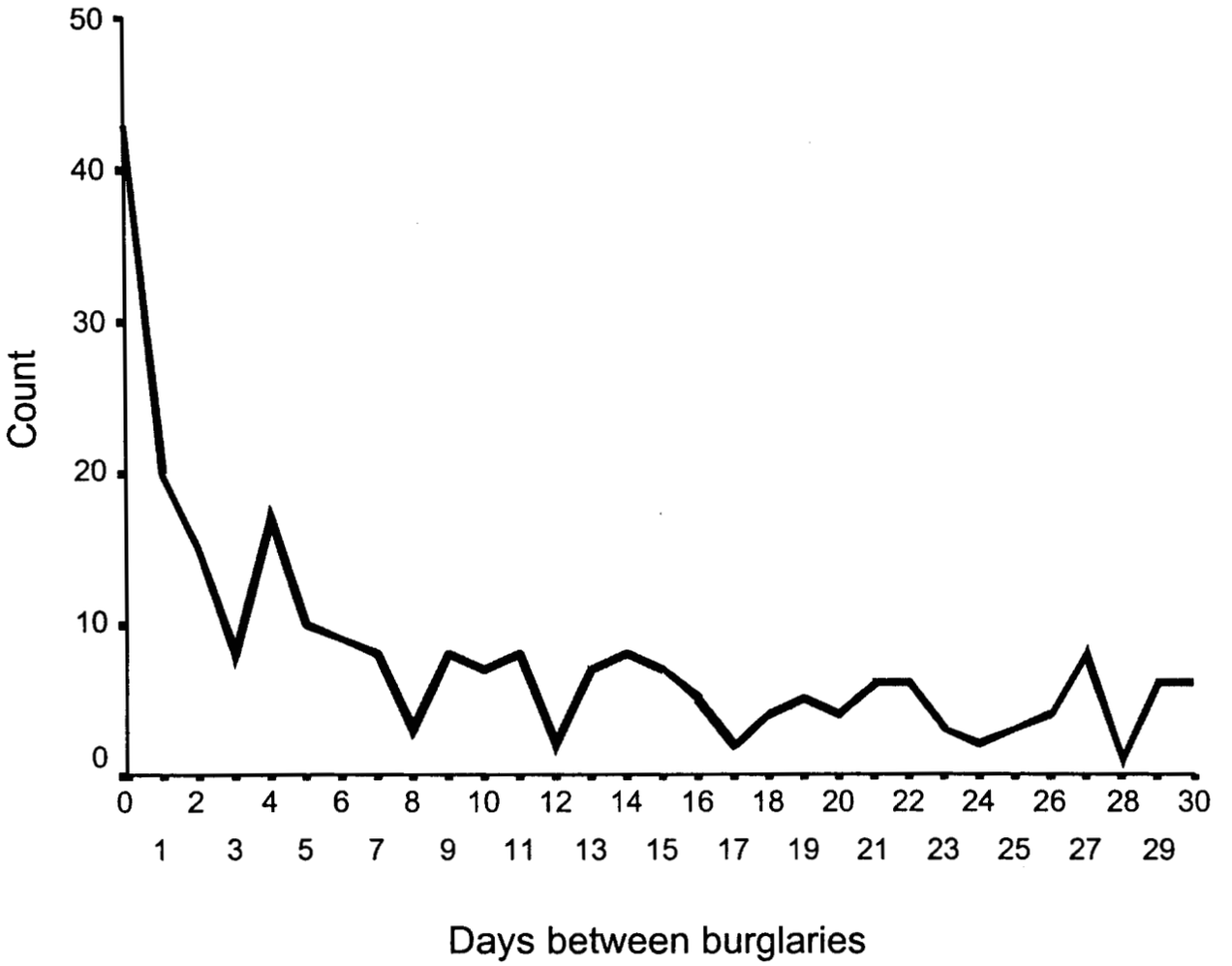
Baltimore
Time Course between Repeat Burglaries
Multi-Family Dwellings



Dallas
Time Course between Repeat Burglaries in Months

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Premise type		Frequency	Percent	Valid Percent	Cumulative Percent
Single family residence	One month	424	44.1	44.1	44.1
	Two months	131	13.6	13.6	57.7
	Three months	111	11.5	11.5	69.2
	Four months	64	6.7	6.7	75.9
	Five months	63	6.5	6.5	82.4
	Six months	37	3.8	3.8	86.3
	Seven months	29	3.0	3.0	89.3
	Eight months	45	4.7	4.7	94.0
	Nine months	25	2.6	2.6	96.6
	Ten months	14	1.5	1.5	98.0
	Eleven months	15	1.6	1.6	99.6
	Twelve months	4	.4	.4	100.0
	Total	962	100.0	100.0	
Multifamily residence	One month	1363	45.8	45.8	45.8
	Two months	567	19.1	19.1	64.9
	Three months	343	11.5	11.5	76.4
	Four months	207	7.0	7.0	83.4
	Five months	154	5.2	5.2	88.5
	Six months	126	4.2	4.2	92.8
	Seven months	70	2.4	2.4	95.1
	Eight months	59	2.0	2.0	97.1
	Nine months	45	1.5	1.5	98.6
	Ten months	17	.6	.6	99.2
	Eleven months	18	.6	.6	99.8
	Twelve months	6	.2	.2	100.0
	Total	2975	100.0	100.0	

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Dallas
Time Course between Repeat Burglaries in Weeks

Premise type		Frequency	Percent	Valid Percent	Cumulative Percent
Single family residence	One week	212	22.0	22.0	22.0
	Two weeks	93	9.7	9.7	31.7
	Three weeks	66	6.9	6.9	38.6
	Four weeks	48	5.0	5.0	43.6
	Five weeks	41	4.3	4.3	47.8
	Six weeks	30	3.1	3.1	50.9
	Seven weeks	29	3.0	3.0	54.0
	Eight weeks	24	2.5	2.5	56.4
	Nine weeks	27	2.8	2.8	59.3
	Ten weeks	31	3.2	3.2	62.5
	Eleven weeks	22	2.3	2.3	64.8
	Twelve weeks	24	2.5	2.5	67.3
	More than 12 weeks	315	32.7	32.7	100.0
	Total	962	100.0	100.0	
Multifamily residence	One week	582	19.6	19.6	19.6
	Two weeks	304	10.2	10.2	29.8
	Three weeks	235	7.9	7.9	37.7
	Four weeks	203	6.8	6.8	44.5
	Five weeks	145	4.9	4.9	49.4
	Six weeks	174	5.8	5.8	55.2
	Seven weeks	122	4.1	4.1	59.3
	Eight weeks	112	3.8	3.8	63.1
	Nine weeks	98	3.3	3.3	66.4
	Ten weeks	87	2.9	2.9	69.3
	Eleven weeks	79	2.7	2.7	72.0
	Twelve weeks	81	2.7	2.7	74.7
	More than 12 weeks	753	25.3	25.3	100.0
	Total	2975	100.0	100.0	

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Dallas
Time Course between Repeat Burglaries in Days

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Premise type		Frequency	Percent	Valid Percent	Cumulative Percent
Single family residence	0	29	6.8	6.8	6.8
	1	51	12.0	12.0	18.9
	2	26	6.1	6.1	25.0
	3	22	5.2	5.2	30.2
	4	20	4.7	4.7	34.9
	5	24	5.7	5.7	40.6
	6	20	4.7	4.7	45.3
	7	20	4.7	4.7	50.0
	8	13	3.1	3.1	53.1
	9	18	4.2	4.2	57.3
	10	8	1.9	1.9	59.2
	11	15	3.5	3.5	62.7
	12	14	3.3	3.3	66.0
	13	18	4.2	4.2	70.3
	14	7	1.7	1.7	71.9
	15	10	2.4	2.4	74.3
	16	9	2.1	2.1	76.4
	17	6	1.4	1.4	77.8
	18	13	3.1	3.1	80.9
	19	14	3.3	3.3	84.2
	20	6	1.4	1.4	85.6
	21	8	1.9	1.9	87.5
	22	5	1.2	1.2	88.7
	23	9	2.1	2.1	90.8
	24	6	1.4	1.4	92.2
	25	9	2.1	2.1	94.3
	26	5	1.2	1.2	95.5
	27	6	1.4	1.4	96.9
	28	8	1.9	1.9	98.8
	29	1	.2	.2	99.1
	30	4	.9	.9	100.0
	Total	424	100.0	100.0	
Multifamily residence	0	87	6.4	6.4	6.4
	1	97	7.1	7.1	13.5
	2	78	5.7	5.7	19.2
	3	69	5.1	5.1	24.3
	4	67	4.9	4.9	29.2
	5	65	4.8	4.8	34.0
	6	59	4.3	4.3	38.3
	7	60	4.4	4.4	42.7
	8	43	3.2	3.2	45.9
	9	43	3.2	3.2	49.0
	10	43	3.2	3.2	52.2
	11	55	4.0	4.0	56.2
	12	45	3.3	3.3	59.5
	13	40	2.9	2.9	62.4
	14	35	2.6	2.6	65.0
	15	37	2.7	2.7	67.7
	16	41	3.0	3.0	70.7
	17	42	3.1	3.1	73.8
	18	31	2.3	2.3	76.1
	19	31	2.3	2.3	78.4
	20	26	1.9	1.9	80.3
	21	27	2.0	2.0	82.2
	22	25	1.8	1.8	84.1
	23	32	2.3	2.3	86.4
	24	35	2.6	2.6	89.0
	25	26	1.9	1.9	90.9
	26	27	2.0	2.0	92.9
	27	38	2.8	2.8	95.7
	28	20	1.5	1.5	97.1
	29	19	1.4	1.4	98.5
	30	20	1.5	1.5	100.0
	Total	1363	100.0	100.0	

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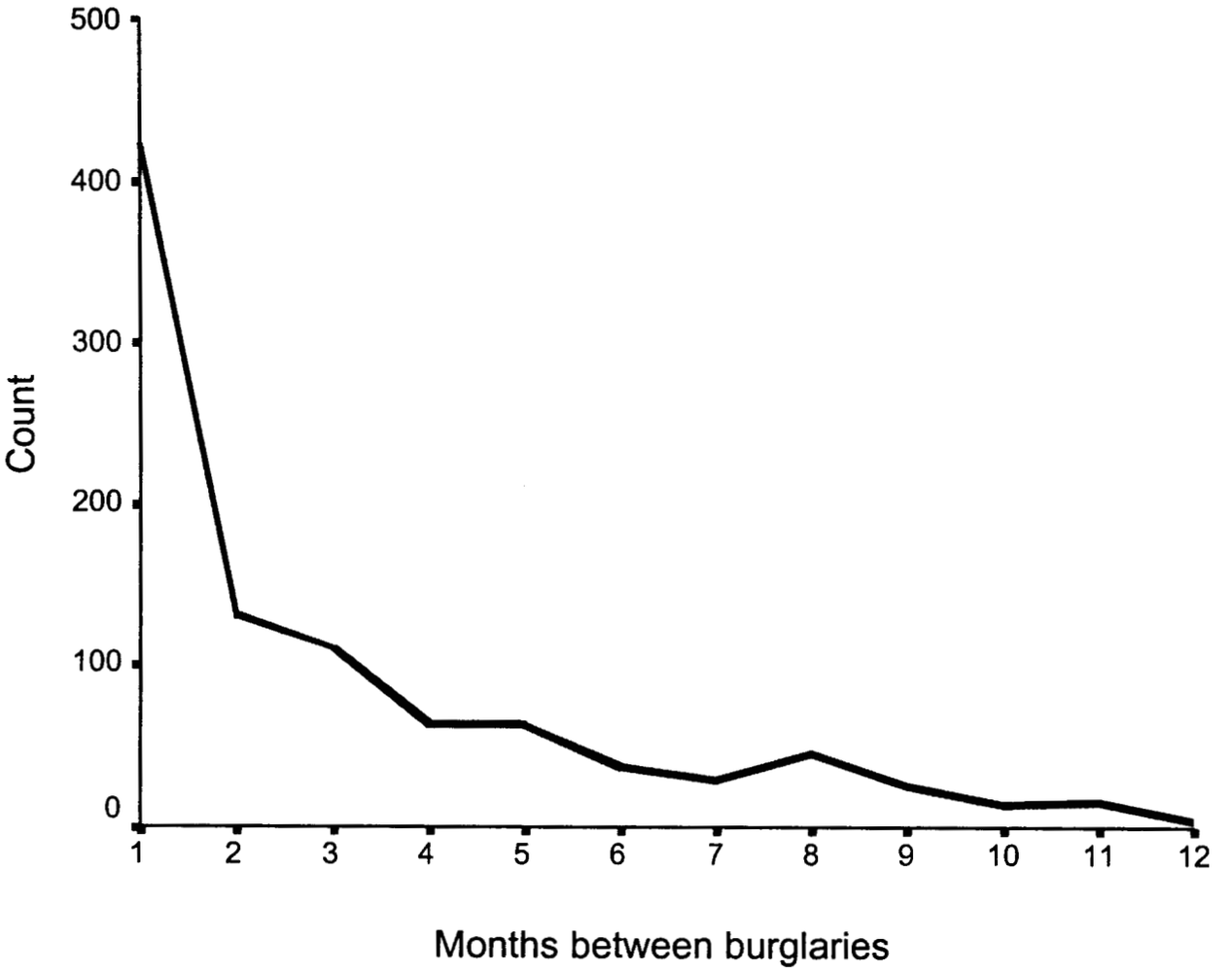
Dallas
Time Course between Repeat Burglaries
Single Family Dwellings



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Dallas
Time Course between Repeat Burglaries
Multi-Family Dwellings

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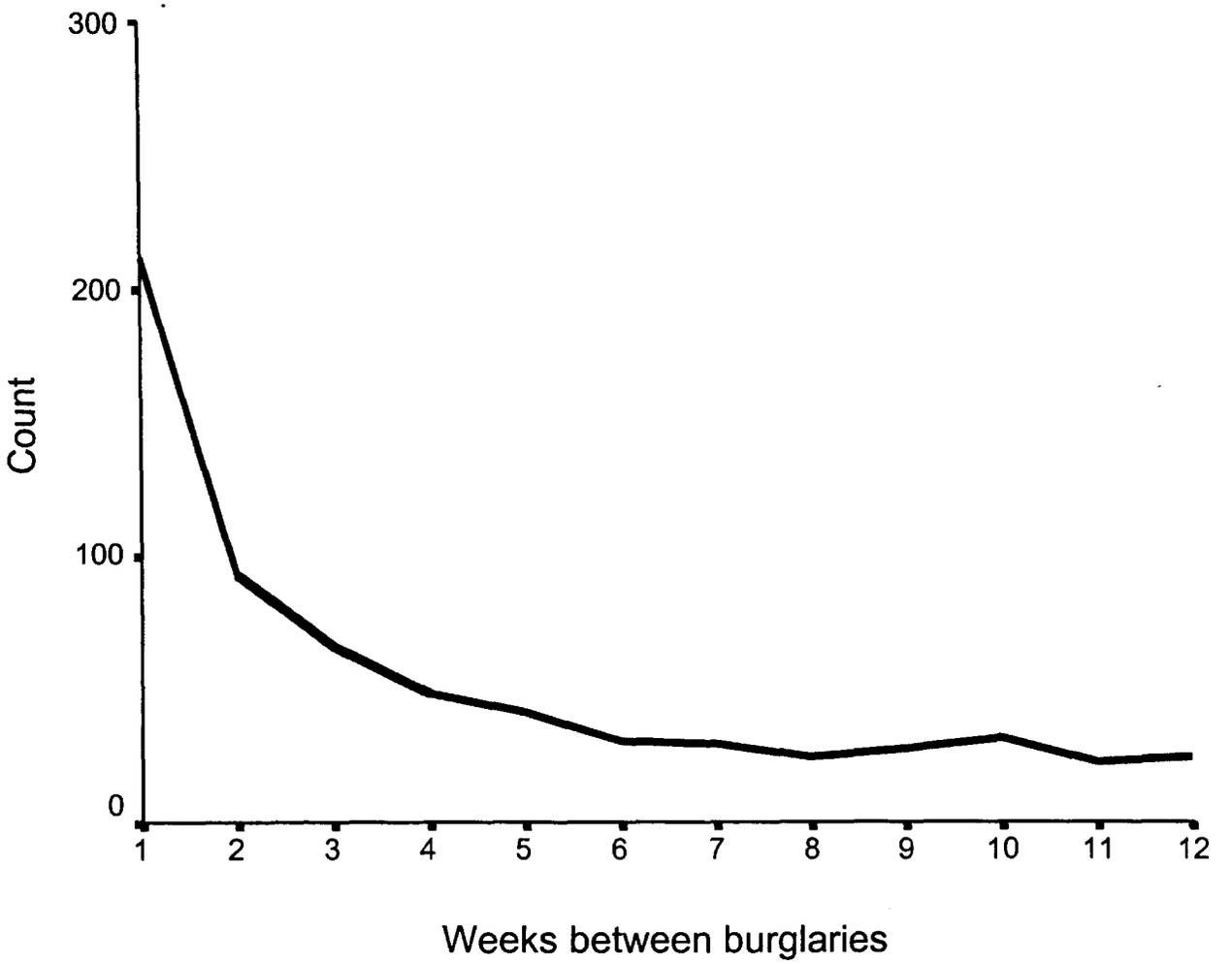
Dallas
Time Course between Repeat Burglaries
Single Family Dwellings



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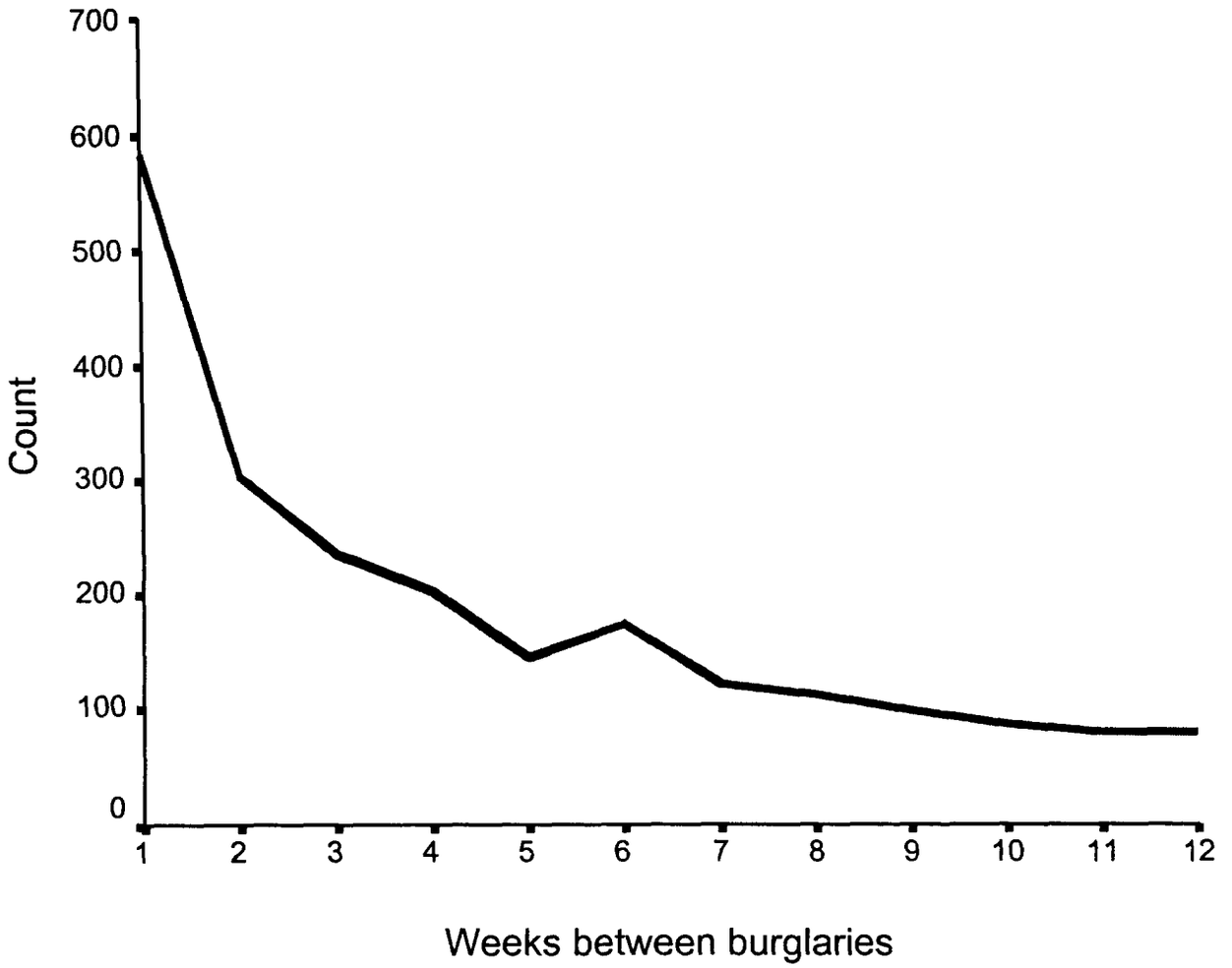
Dallas
Time Course between Repeat Burglaries
Multi-Family Dwellings



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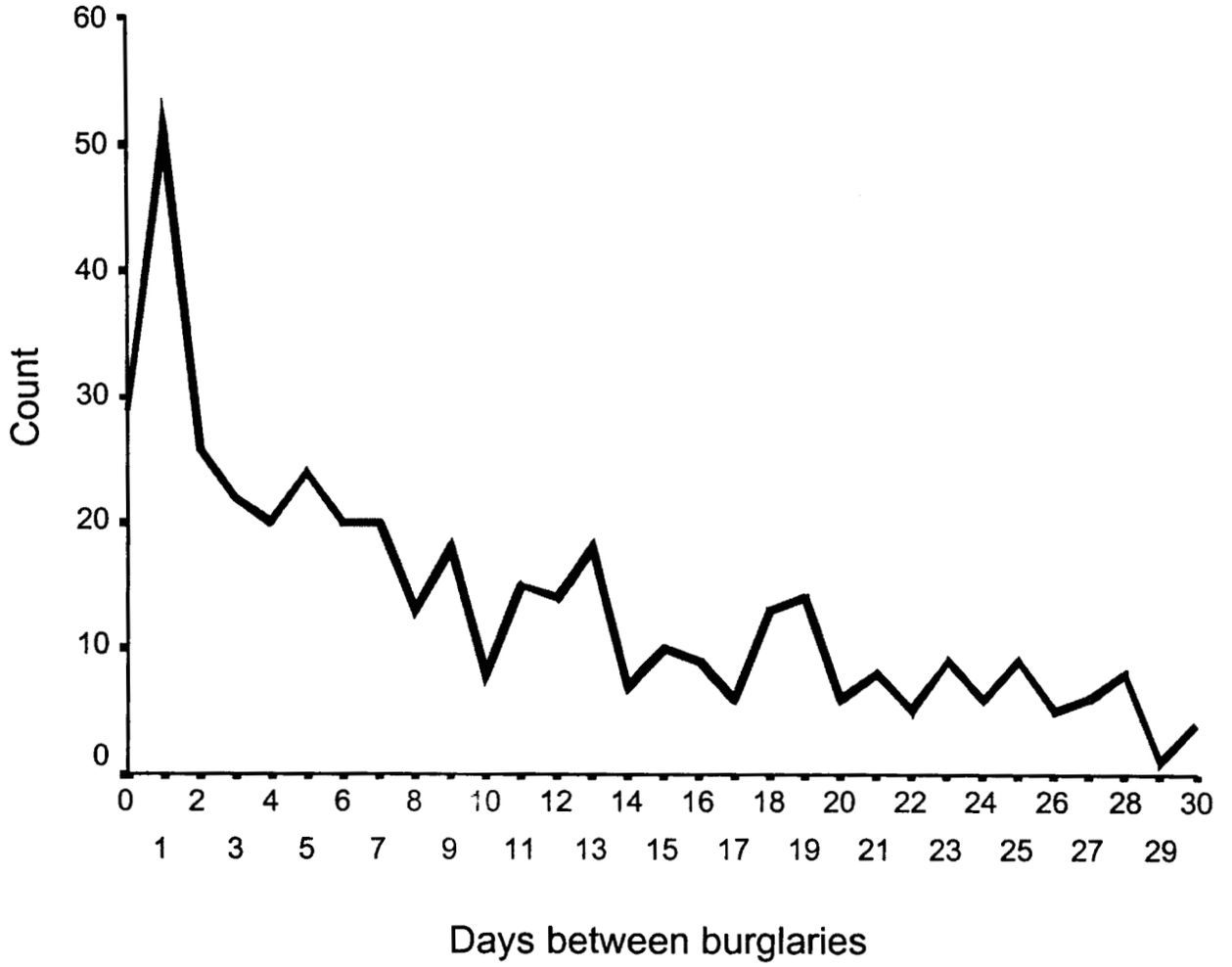
Dallas
Time Course between Repeat Burglaries
Single-Family Dwellings



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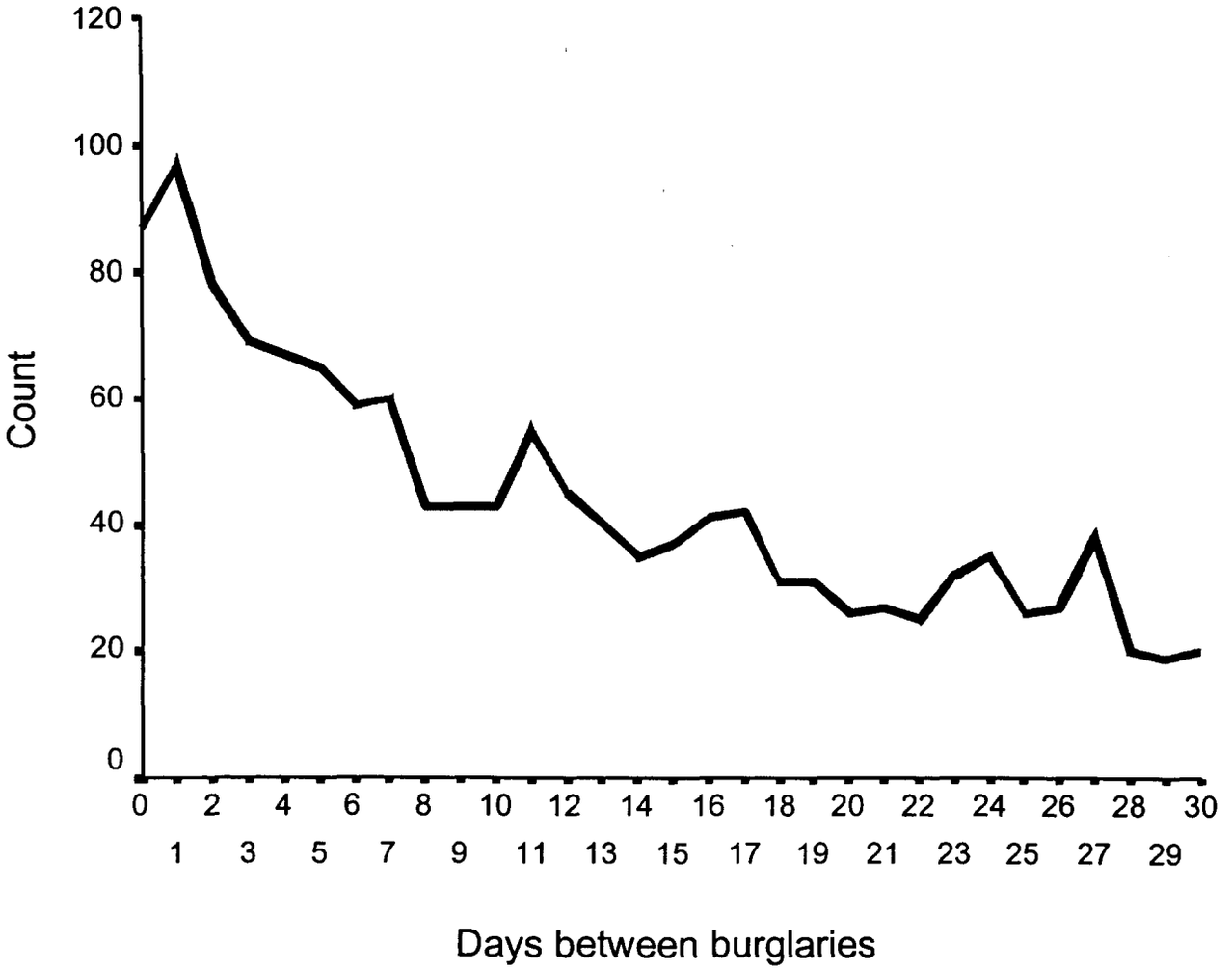
Dallas
Time Course between Repeat Burglaries
Multi-Family Dwellings



San Diego
Time Course between Repeat Burglaries in Months

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Premise type		Frequency	Percent	Valid Percent	Cumulative Percent
Single Family residence	One month	63	100.0	100.0	100.0
	Two months				
	Three months				
	Eight months				
	Eleven months				
	Twelve months				
	Total				
Multifamily residence	One month	353	96.2	96.2	96.2
	Two months	8	2.2	2.2	98.4
	Three months	2	.5	.5	98.9
	Eight months	1	.3	.3	99.2
	Eleven months	2	.5	.5	99.7
	Twelve months	1	.3	.3	100.0
	Total	367	100.0	100.0	

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San Diego
Time Course between Repeat Burglaries in Weeks

Premise type		Frequency	Percent	Valid Percent	Cumulative Percent
Single Family residence	One week	57	90.5	90.5	90.5
	Two weeks	4	6.3	6.3	96.8
	Three weeks				
	Four weeks				
	Five weeks	2	3.2	3.2	100.0
	Six weeks				
	Seven weeks				
	Eight weeks				
	Nine weeks				
	Ten weeks				
	More than 12 weeks				
	Total	63	100.0	100.0	
Multifamily residence	One week	319	86.9	86.9	86.9
	Two weeks	19	5.2	5.2	92.1
	Three weeks	10	2.7	2.7	94.8
	Four weeks	3	.8	.8	95.6
	Five weeks	5	1.4	1.4	97.0
	Six weeks	1	.3	.3	97.3
	Seven weeks	2	.5	.5	97.8
	Eight weeks	1	.3	.3	98.1
	Nine weeks	1	.3	.3	98.4
	Ten weeks	2	.5	.5	98.9
	More than 12 weeks	4	1.1	1.1	100.0
	Total	367	100.0	100.0	

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San Diego
Time Course between Repeat Burglaries in Days

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Premise type		Frequency	Percent	Valid Percent	Cumulative Percent
Single Family residence	0	22	34.9	34.9	34.9
	1	20	31.7	31.7	66.7
	2	5	7.9	7.9	74.6
	3	2	3.2	3.2	77.8
	4	2	3.2	3.2	81.0
	5	2	3.2	3.2	84.1
	6	1	1.6	1.6	85.7
	7	3	4.8	4.8	90.5
	8				
	9	1	1.6	1.6	92.1
	10	1	1.6	1.6	93.7
	11				
	12				
	13	1	1.6	1.6	95.2
	14	1	1.6	1.6	96.8
	15				
	16				
	17				
	18				
	19				
	21				
	23				
	26				
	28				
	29	1	1.6	1.6	98.4
	30	1	1.6	1.6	100.0
	Total	63	100.0	100.0	
Multifamily residence	0	156	44.2	44.2	44.2
	1	81	22.9	22.9	67.1
	2	29	8.2	8.2	75.4
	3	21	5.9	5.9	81.3
	4	11	3.1	3.1	84.4
	5	9	2.5	2.5	87.0
	6	8	2.3	2.3	89.2
	7	4	1.1	1.1	90.4
	8	6	1.7	1.7	92.1
	9	3	.8	.8	92.9
	10	5	1.4	1.4	94.3
	11	2	.6	.6	94.9
	12	1	.3	.3	95.2
	13	1	.3	.3	95.5
	14	1	.3	.3	95.8
	15	1	.3	.3	96.0
	16	4	1.1	1.1	97.2
	17	2	.6	.6	97.7
	18	1	.3	.3	98.0
	19	1	.3	.3	98.3
	21	1	.3	.3	98.6
	23	1	.3	.3	98.9
	26	1	.3	.3	99.2
	28	1	.3	.3	99.4
	29	1	.3	.3	99.7
	30	1	.3	.3	100.0
	Total	353	100.0	100.0	

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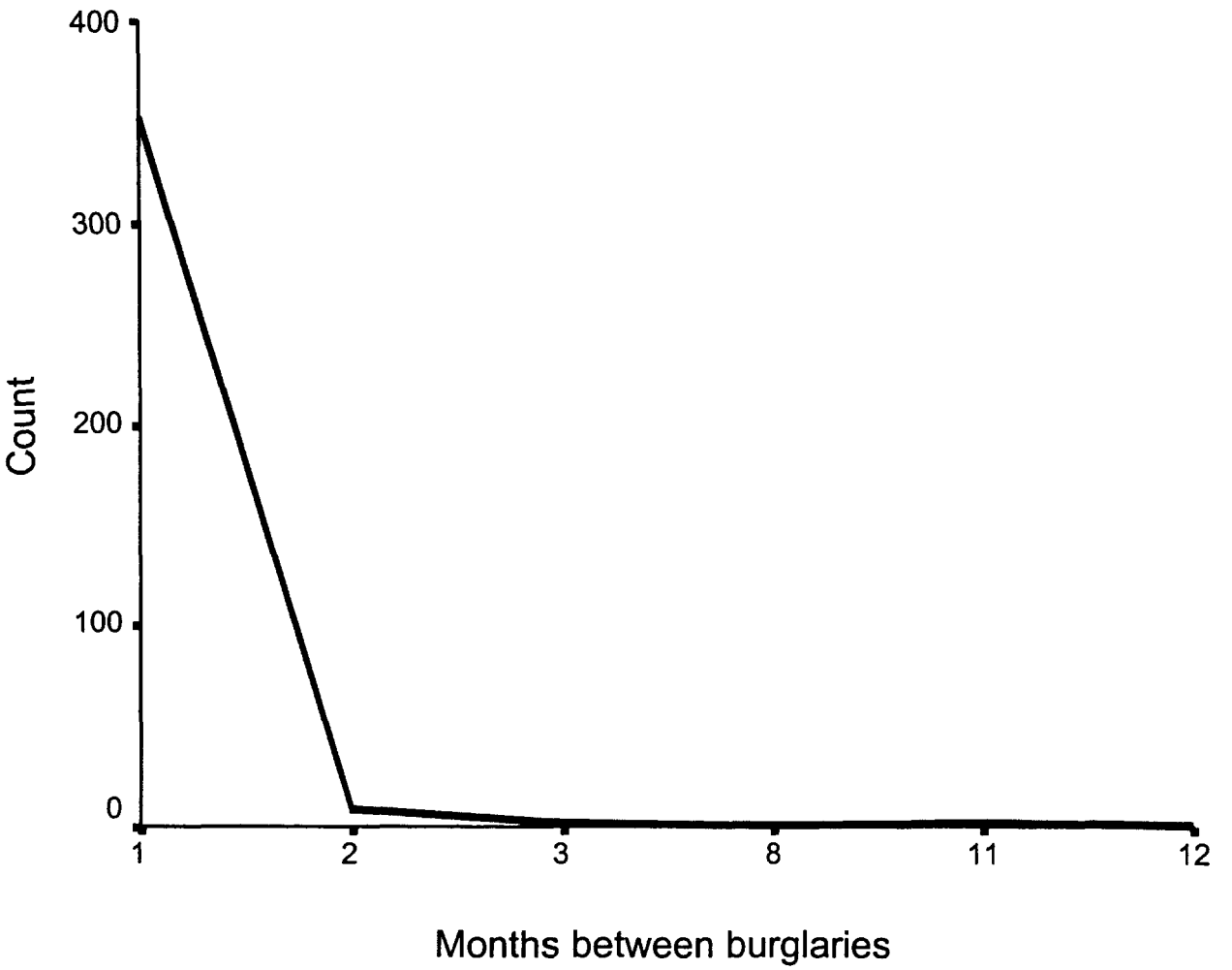
San Diego
Time Course between Repeat Burglaries
Multi-Family Dwellings



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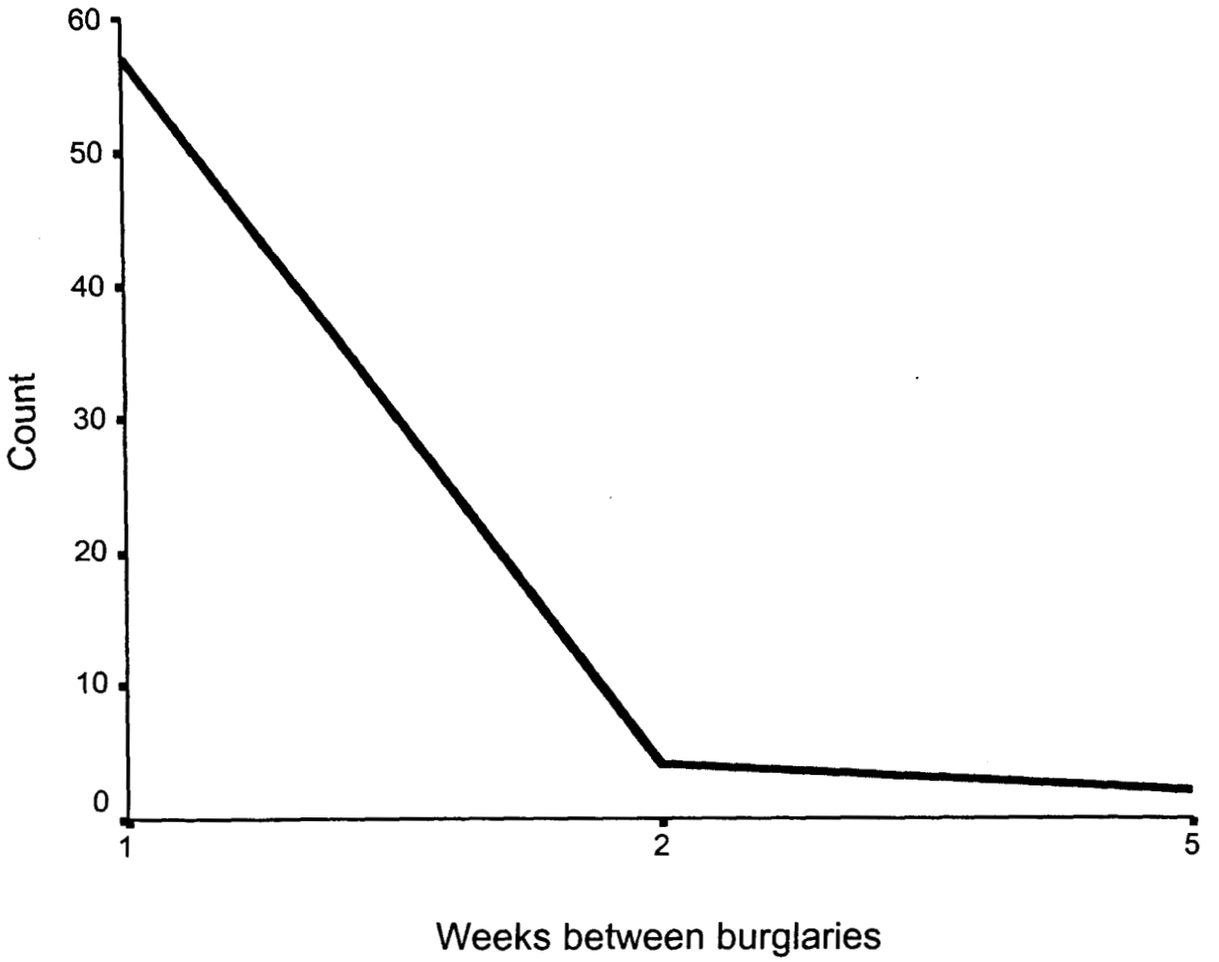
San Diego
Time Course between Repeat Burglaries
Single Family Dwellings



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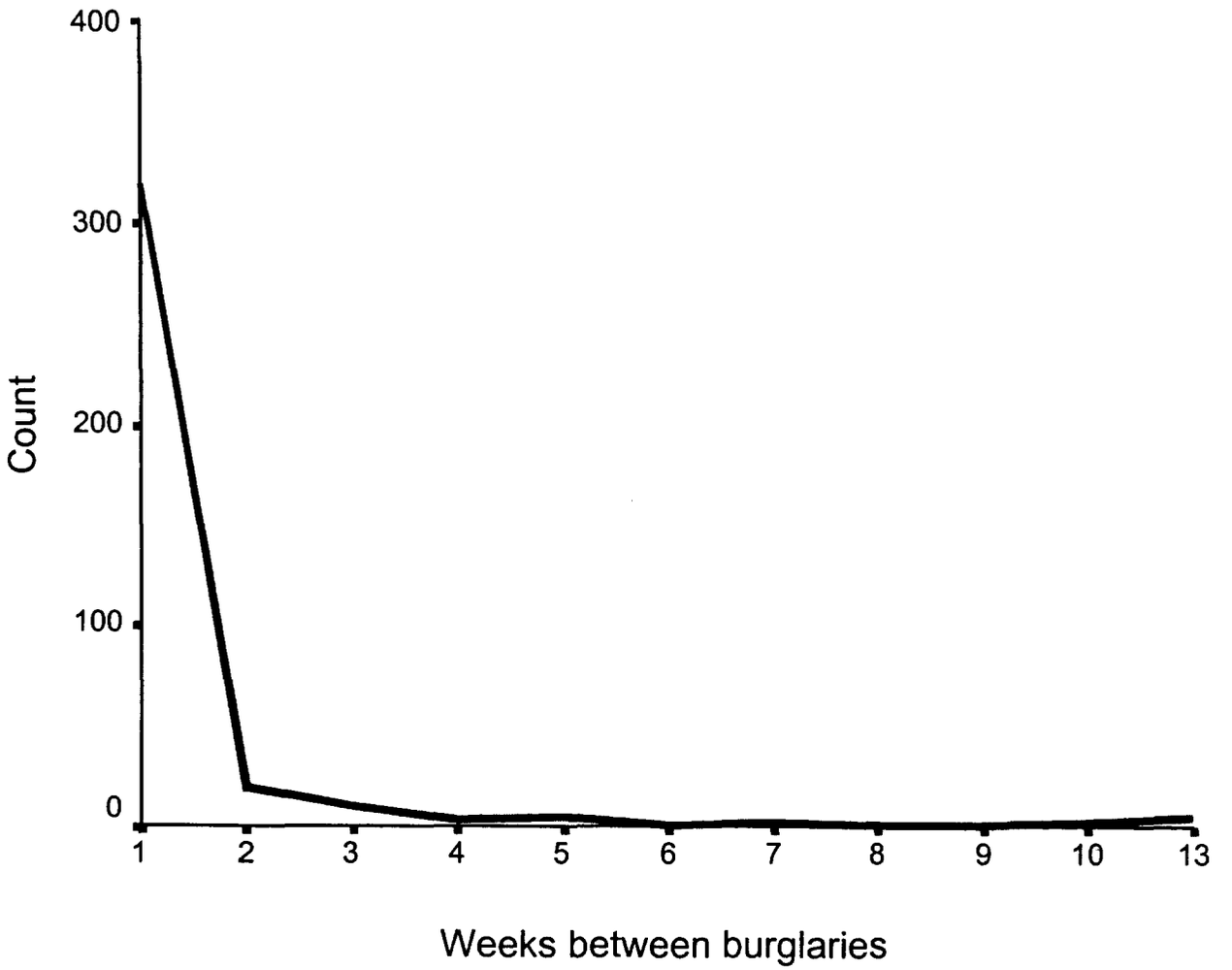
San Diego
Time Course between Repeat Burglaries
Multi-Family Dwellings



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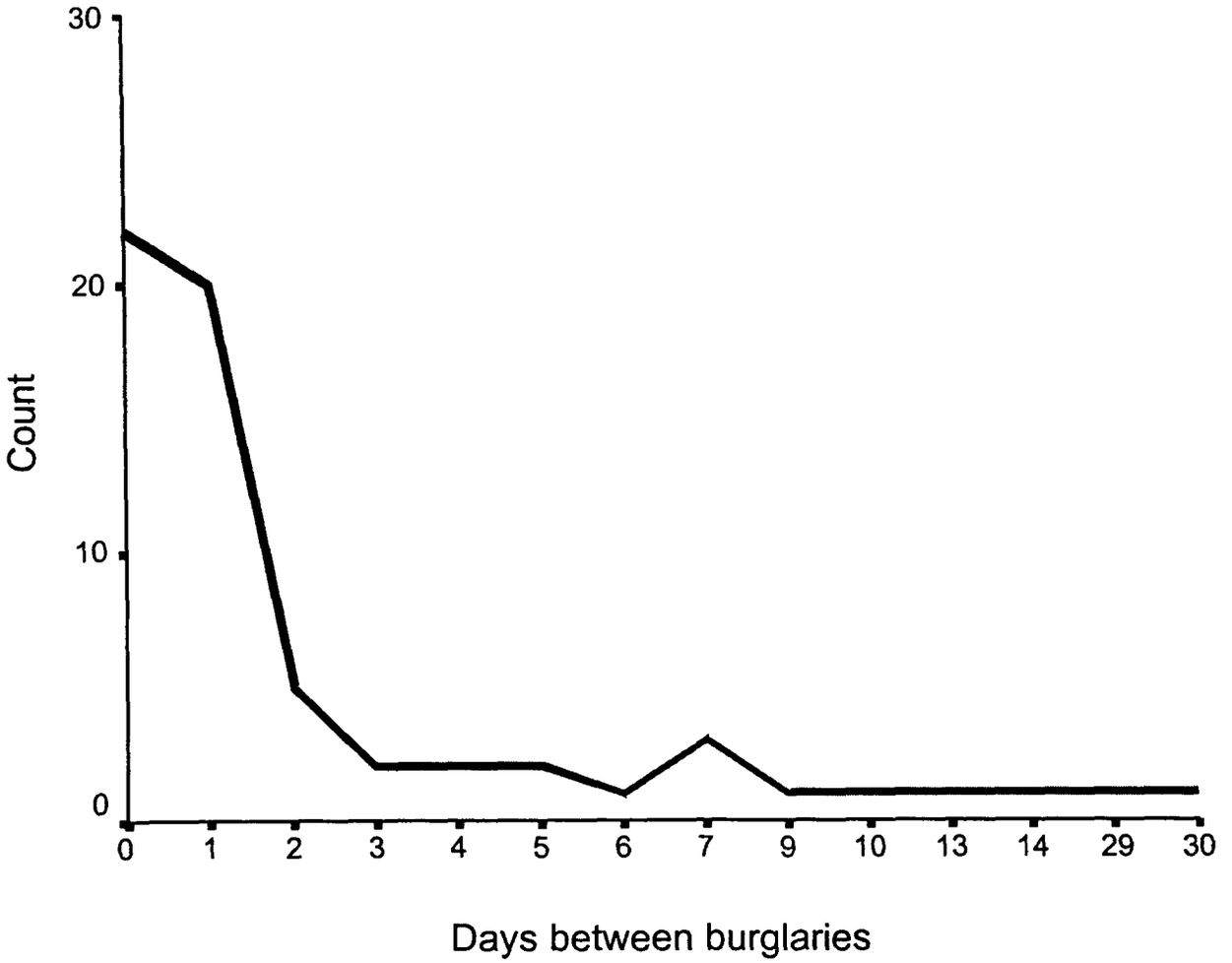
San Diego
Time Course between Repeat Burglaries
Single-Family Dwellings



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San Diego
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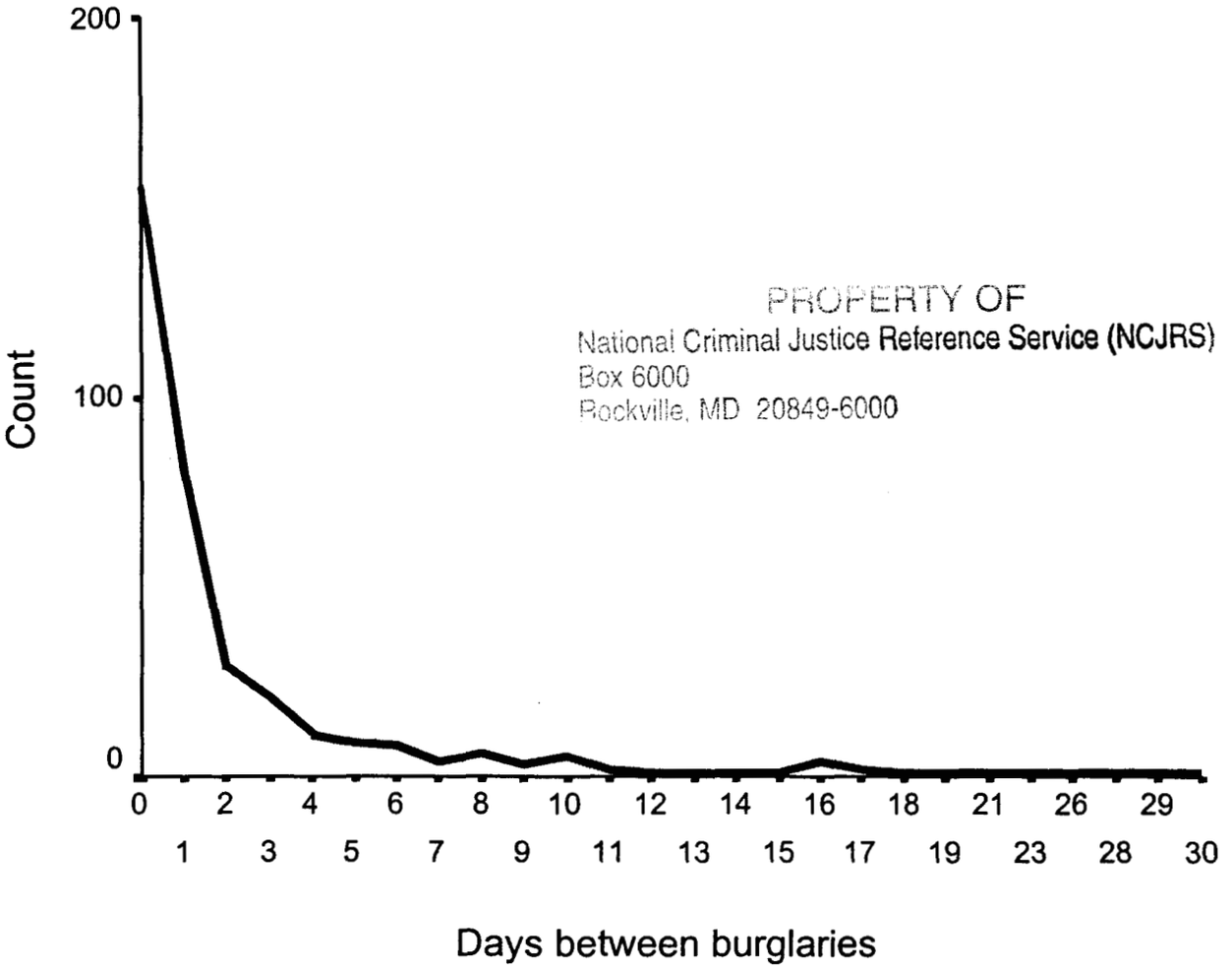
Multi-Family Dwellings



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