Journal of International Information Management

Volume 9 | Issue 1 Article 6

2000

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ABSTRACT

The efficacy of new policing techniques has called in to question a long held canon of criminologists: that vast social forces (such as poverty, racism and demographics) beyond police control are the primary determinants of criminal activity. A new approach to policing called COMSTAT (computerized analysis of crime statistics) has resulted in a significant reduction in criminal activity within the cities that have adopted it according to FBI Uniform Crime Report data. These results were achieved by quickly identifying and targeting minor social disorders crimes (such as graffiti, loitering, and vandalism) before they lead to major social disorders (such as robberies, rapes, and homicides). This paper discusses the information and management theory underlying the COMSTAT approach to policing.

INTRODUCTION

For decades, criminologists have argued that the key predictors of criminal activity are vast social forces (such as poverty, racism and demographics) beyond police control (Pederson, 1996 & 1997). The crime reduction results of a new approach to policing called COMSTAT (computerized analysis of crime statistics) seems to refute this basic tenet of criminologists. COMSTAT does not argue that social forces do not have the potential ti impact crime rates. Rather, COMSTAT suggests that proactive policing, based on solid information analysis and the resultant policing strategies, can reduce the impact of these societal artifacts.

Advanced analytical techniques (such as pattern matching and identification) that empower management to make more informed decisions form the theoretical foundation of the COMSTAT process. The COMSTAT process seeks to reduce criminal activity and by extension to enhance a community's quality of life.

An advanced computer-based decision support system to aid decision making provides the technological infrastructure of the COMSTAT approach. This technological foundation is used to facilitate more modern decision-making techniques based on (near) real time information within the day-to-day activities of a police organization. More specifically, the technological and decision making techniques permit constant monitoring of policing practices, which facilitates continuous improvements in police productivity. Early results indicate that the COMSTAT approach has merit.

For 1997, the two early adopters (New Orleans, LA and Newark, NJ) of the COMSTAT process were number one and two in the nation in terms of violent crime reduction for cities with populations over 250,000. These results provide strong evidence that the COMSTAT process may be able to significantly improve the efficacy of policing with respect to reducing crime.

The paper proceeds as follows. First, the COMSTAT methodology is explained in detail. Then, the COMSTAT's crime reduction efficacy with respect to early adopters is discussed. Finally, conclusions with respect to the COMSTAT process are provided and discussed.

THE COMSTAT METHODOLOGY

COMSTAT combines statistical analysis and management accountability to transform policing practices. COMSTAT facilitates the rapid retrieval and analysis of crime data and drives accountability and decision-making authority to the lowest appropriate level within a police organization. COMSTAT utilizes a four-step policing process to reduce crime (Brady, 1997b):

- Accurate and timely intelligence
- Rapid deployment that is concentrated, synchronized and focused
- Effective tactics
- Relentless follow-up and assessment.

Accurate and Timely Intelligence

Accurate and timely intelligence requires that statistical analyses are done on a daily basis. This permits police to anticipate crime rather than react to it. On a daily basis, the COMSTAT software identifies and updates crime patterns. This allows police personnel to target areas experiencing criminal activity more quickly than in the past. More specifically, COMSTAT better operationalizes the characteristics of valuable information (Stair & Reynolds, 1999, p. 7) with respect to policing:

- Accurate
- Complete
- Flexible
- Relevant
- Simple
- Timely
- Verifiable
- Accessible
- Secure.

The COMSTAT system utilizes a state-of-the-art approach to data collection (i.e., accurate, complete, and verifiable), which results in data analysis being much closer to real time (i.e., timely). System security is facilitated by a rigorous log-in protocol. The COMSTAT software permits flexible data analysis by making slicing and dicing the data a simple task. COMSTAT

synthesizes complex data about specific criminal cases into crime maps and summary statistics that highlight emerging criminal patterns. These crime maps and other COMSTAT statistical tools are accessed by the precinct commanders to develop the day's policing strategies (i.e., accessible and relevant).

At its core, COMSTAT's computer mapping process and statistical software are used to identify emerging and systemic patterns of criminal activity. Other recent research lends credence to the proposition that criminal activity may adhere to identifiable patterns and that socioeconomic policy can impact these patterns.

For example, researchers analyzing every American death certificate over a number of years found that death rates spiked up at the beginning of the month. This spike held steady month after month and year after year. From a health perspective, substance abuse was identified as a primary contributing factor for the rise in death rates. Fiscally speaking, the researchers attributed the jump in mortality to government support payments, such as welfare or disability, which arrive at the beginning of the month. The research found that 106.5 homicides occurred during the first week of a month for every 100 homicides that occurred during the last week of the preceding month. For deaths involving substance abuse and an external cause (such as suicides, accidents, and homicides), there were 114.2 such deaths in the first week of the month for every 100 deaths in the last week of the preceding month (Phillips, et al., 1999).

From a societal and longer-term perspective, COMSTAT's greatest contribution may be its criminal pattern identification processes leading to additional systemic patterns of criminal activity being identified and to a better understanding of the root causes of such systemic patterns such that police and other organizations can act on them. From a policing perspective, COMSTAT could help police develop tactics and strategies to counter the systemic socioeconomic artifacts that contribute to criminal activity. Additionally, COMSTAT can assist police in developing strategies and tactics dealing with community specific societal artifacts such as street gangs, the closing of a large employer, etc.

Rapid Deployment That Is Concentrated, Synchronized and Focused

Block-by-block crime is generated by COMSTAT. This data allows police commanders to pinpoint areas experiencing high levels of criminal activity. The commanders then saturate the crime hot zones with police personnel. The objective being to extinguish the criminal activity before it has a chance to grow and spread to other neighborhoods (Pederson, 1997). For example, a pattern of daytime burglaries in three adjoining neighborhoods was identified by the COMSTAT crime mapping software. Patrol officers and detectives blanketed the neighborhoods with a police presence and were able to rapidly respond to a burglary in progress. This strategy lead to a quick response to a crime report. The ensuing investigation eventually led to the arrests of nine people in connection with 35 burglaries. The investigation also resulted in the seizure of 10 guns and the recovery of $50,000 in stolen goods (Perlstein & Brandon, 1997).

Effective Tactics

Effective tactics require identifying and understanding which policing strategies to use to reduce criminal activity and, by extension, to enhance a community's quality of life. The broken window theory of policing provides a theoretical foundation for many of COMSTAT's tactical policing strategies. The broken window theory argues that a zero-tolerance approach no nuisance crimes (such as graffiti, loitering, and vandalism) will enhance a community's quality-of-life. Essentially, the broken window theory argues that nuisance crimes should be targeted relentlessly, because they create an environment that fosters more serious crimes. The underlying concept is that minor social disorders breed major social disorders (Wilson & Kelling, 1982; Kelling & Coles, 1996).

More generally, the broken window theory argues that a broken window is a sign of community neglect and (if left untreated) leads to more serious social decay. Thus, the police, other municipal departments, and the community at large should work in concert to see that abandoned cars, garbage piles, graffiti, etc., are eradicated as soon as possible to prevent further more serious erosion with respect to the community's quality of life (Wilson & Kelling, 1982; Kelling & Coles, 1996). Additional support for the broken window theory can be found in recent research with respect to burglary.

Burglary has long been considered a relatively innocuous low-priority non-violent crime. However, recent research (sing Florida court records) indicates that burglary often predates more serious crimes. The research showed that murderers and rapists were more likely to have begun as burglars than as any other type of criminal. Further, DNA analysis and DNA databases are increasingly identifying known burglars as suspects in murders and rapes. Collecting DNA samples from murders and rapists has become common practice. Additionally, fourteen states now also collect DNA samples from convicted burglars. For some states, over 50% or more of the crimes cleared using DNA databases have been connected to burglars. For example, Virginia and Florida have been using DNA databases to help solve unsolved crimes since the early 1990s. Burglars have accounted for 60% of the crimes solved with DNA analysis in Virginia. In Florida, the figure is about 50% (Willing, 1998a & 1998b). The results provide strong evidence of the broken window theory's validity--reducing a lesser crime (burglary) will potentially lead to a reduction in more serious crimes (murder and rapes).

Another key tactic of the COMSTAT approach requires that detectives should interview everybody who gets arrested because that leads to more arrests and by extension lessens future crime. The key theme is that being proactive today can reduce crime tomorrow (Brady, 1997b).

Relentless Follow-up and Assessment

Relentless follow-up and assessment dictates that weekly meetings are held between the top management of the police department and the precinct commanders (as a group). During these meetings, the precinct commanders are questioned in detail about crime and crime fighting strategies in their precincts. The follow-up and assessment process is facilitated by the computerized

crime maps. The exact location of every crime is mapped. Also, response times and arrest rates are logged and studied (Brady, 1997b; Perlstein & Brandon, 1997). The maps and other statistics highlight very clearly which strategies and tactics are working and not working.

At the weekly meetings, precinct commanders are held accountable for reducing crime in their precinct and are expected to have detailed knowledge about the criminal activity and investigations in their precincts. Further, they are expected to continuously reduce criminal activity. If they do not come prepared with detailed knowledge or fail to reduce crime, they are replaced. Precinct commanders, in turn, hold the personnel under them (e.g., officers and detectives) accountable for solving crimes and reducing crime rates. To facilitate information flow and accountability, precinct commanders hold mini-COMSTAT meetings with their platoon commanders and detectives (Brady, 1997b; Perlstein & Brandon, 1997). The key is that more precise measurements of each individual's and each precinct's productivity are now available and constantly monitored for improvement.

The identification of crime patterns that cross precinct boundaries is also facilitated by the weekly meetings between top management and the precinct commanders. For example, a study of robberies at the weekly COMSTAT meetings revealed that cars used in robberies in one precinct were being abandoned in another precinct. Patrol officers were stationed at strategic points between the precincts. This resulted in a quick response to a robbery and the arrest of five suspects who were ultimately charged with several more armed robberies and two shootings (Perlstein & Brandon, 1997).

COMSTAT RESULTS: THE EARLY ADOPTERS

The crime statistics referred to in this section are based on the FBI's Uniform Crime Report data. Criteria for compiling the Uniform Crime Report data are specified by the FBI. The cities compile the data. Then, the FBI collects the data from the cities and uses the data to generate crime statistics.

In 1995, the New York Police Department (NYPD) first implemented many of the principles that eventually became the COMSTAT process of policing (Brady, 1997a). Crime in New York declined by 36% and murders fell by 51% from 1994 (the year prior to implementation) to 1997. During this period, the nation as a whole reported a 3.6% decline in crime. From 1994 to 1996, the public approval rating for the NYPD rose from 36% to 72% (*Crime Reduction Services*, 1999). New York now has crime statistics comparable to cities like Boise, Idaho and is now safer than 75% of the nation's largest cities (Perlstein, 1997).

During 1997 (see Table 1), the first full year after the launch of the COMSTAT process in New Orleans, violent crime was down 2.4%. Non-violent crime declined 13% and overall crime fell 15%. In the city's French Quarter, violent crime was down 35%. According to Uniform Crime Report data for 1997, New Orleans reported the sharpest drop in violent crime for U. S. cities with populations over 250,000. During 1998 (see Table 2), violent crime declined another 18% and non-violent crime fell another 9%. Overall crime was down nearly 11%.

Table 1. New Orleans Uniform Crime Report 1996 vs. 1997

Offense	1996	1997	% Change
Murder	350	266	-24.00%
Rape	390	385	-1.28%
Armed Robbery	4,509	2,999	-33.49%
Simple Robbery	1,191	973	-18.30%
Assault	4,675	3,821	-18.27%
Violent Crime Total	**11,115**	**8,444**	**-24.03%**
Burglary	9,954	8,107	-18.56%
Theft	22,774	19,813	-13.00%
Auto Theft	10,169	9,380	-7.76%
Non-Violent Crime Total	**42,897**	**37,300**	**-13.05%**
TOTAL CRIMES INDEX	**54,012**	**45,744**	**-15.31%**

Table 2. New Orleans Uniform Crime Report 1997 vs. 1998

Offense	1997	1998	% Change
Murder	266	230	-13.53%
Rape	385	299	-22.34%
Armed Robbery	2,999	2,195	-26.81%
Simple Robbery	973	770	-20.86%
Assault	3,821	3,394	-11.18%
Violent Crime Total	**8,444**	**6,888**	**-18.43%**
Burglary	8,107	7,008	-13.56%
Theft	19,813	18,645	-5.90%
Auto Theft	9,380	8,270	-11.83%
Non-Violent Crime Total	**37,300**	**33,923**	**-9.05%**
TOTAL CRIMES INDEX	**45,744**	**40,811**	**-10.78%**

In early 1997, the Newark (NJ) Police Department implemented the COMSTAT process. For 1997, Newark reported the second largest drop in violent crime for U. S. cities with populations over 250,000. Table 3 summarizes1996 (the last non-COMSTAT year) and 1998 crime statistics for Newark. Over the two-year COMSTAT period, Newark reduced both violent (35.65%) and non-violent crime (31.94%) in excess of 30%.

The fact that COMSTAT's two earliest adopters, New Orleans and Newark, had the highest reductions in violent crime among the nation's 60 largest cities (i.e., populations over 250.000) for 1997 provides strong evidence of COMSTAT's efficacy with respect to reducing crime.

Table 3. Newark (NJ) Uniform Crime Report 1996 vs. 1998

Offense	1996	1998	% Change
Murder	92	60	-34.78%
Rape	179	162	-9.50%
Robbery	4,219	2,846	-32.54%
Assault	4,271	2,569	-39.85%
Violent Crime Total	**8,761**	**5,637**	**-35.65%**
Burglary	5,991	3,481	-41.90%
Theft	11,694	9,987	-23.14%
Auto Theft	7,992	5,000	-37.43%
Non-Violent Crime Total	**25,677**	**17,468**	**-31.94%**
TOTAL CRIMES INDEX	**34,438**	**23,105**	**-32.91%**

CONCLUSIONS

Criminologists have postulated for decades that crime rates are a function of vast social forces (such as poverty, racism, and demographics) beyond police control (Pederson 1996 & 1997). COMSTAT's early results, in New Orleans and Newark, seem to call into question this basic tenet of criminologists who have argued that police tactics have a minimal effect on crime. The argument is not that social forces do not have the potential to impact crime rates. Rather, the argument is that proactive policing, based on solid information analysis and the resultant policing strategies, can lessen the effect of these societal artifacts.

Replication of COMSTAT's initial success in additional cities is required before it can be conclusively argued that COMSTAT's policing strategies can have a significant impact with

respect to reducing crime rates. Additionally, to prove its long-term worth as a superior approach to current policing practices, COMSTAT will need to continue to reduce crime for many consecutive years within the communities that have adopted it. Assuming the COMSTAT policing process becomes more widely adopted, longitudinal research should be conducted across a larger number of cities to better determine COMSTAT's long-term efficacy with respect to reducing crime rates and improving a community's quality of life.

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