THE EFFECTS OF RESPONSE TIME ON CITIZEN SATISFACTION

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ABSTRACT

The Response Time Analysis study was designed to evaluate the effect of response time on crime outcomes such as on-scene arrests, witness availability, citizen satisfaction with response time, and the frequency of citizens' injuries in connection with crime and noncrime incidents. Also, problems and patterns in reporting crime or requesting police service were identified.

Data were obtained for all crime and noncrime calls from areas of the city with the highest number of robberies and aggravated assaults. Civilian observers accompanied field officers to collect data on field travel times, on-scene apprehensions, and witness availability. Tape content analysts monitored dispatch tapes to measure dispatch time. Citizen interviews were used to collect data on reporting time, problems and patterns in reporting, citizen satisfaction, and length of hospital stay (for events with injuries).

This paper summarizes the findings with emphasis on citizen satisfaction and the implications to call prioritization and manpower allocation. Citizen satisfaction with response time is not determined by police response time. Citizens' expectations and perceptions of response time are most important. In addition, citizens are able to discriminate the types of calls for which rapid police response can increase the probability of making an arrest or finding a witness. Since calls for which rapid police response is effective are not frequent, and citizens are tolerant of delays when response time does not matter, police administrators have flexibility to reduce costs for response time or creatively allocate resources to experiment with new programs.

INTRODUCTION

As a public service agency, a police department must be concerned not only with its operational effectiveness in achieving its designated functions, but also with the satisfaction of the citizens of the community it serves. At one extreme, it may be argued that citizen satisfaction is the ultimate criterion for evaluating police performance. If the public is not satisfied, high performance on other issues will not matter except as they help convince the public to be satisfied.

Furthermore, satisfaction is an applicable measure not only to crime calls, but also to other types of calls for which police service is requested (Furstenberg, 1973: 2-3). Most calls are not crime. Numerous studies have documented the overwhelming preponderance of noncrime to crime calls. Furstenberg points out that police officers frequently view response to noncrime calls as a distraction from their primary function of fighting crime. However, the demand for such service indicates noncrime calls are of concern to numerous citizens, and police departments have to be responsive to those demands. For noncrime calls, citizen satisfaction is a primary consideration. There is no legally mandated police procedure for the diversity of services requested. The proper handling of a call varies with each situation. In the absence of objective performance measures, citizen satisfaction is the primary criterion of effective police service.

However, satisfying citizens while maintaining effective police operations can present a dilemma for police administrators. On the one hand, there is the

desire to accomplish objectives such as deterring crime, increasing arrest rates, obtaining evidence for more convictions, or minimizing serious injuries. On the other hand, citizens request service for a variety of mundane tasks in which police can do little, and which contribute little to the accomplishment of their concrete objectives. Police resources are limited. Police operations which are performed solely to satisfy citizens can distract resources which are needed elsewhere. It is extremely costly if citizens remain dissatisfied after efforts are made to appease them.

However, citizen satisfaction may also be an important tool of police work. Goldstein (1977: 62-63) has argued that improved citizen cooperation and involvement in crime control may be substantially more effective than increased investments in police manpower or technology. Findings from the response time study support Goldstein's claim (Board of Police Commissioners, Kansas City, Missouri, Police Department, 1977: Volume II, Analysis, p. 81). Effective efforts to increase citizen satisfaction may increase rapport between the police and the public and further assist the operational effectiveness of the department.

It is commonly assumed by police administrators that rapid response is a determinant of citizen satisfaction. If citizens are unhappy over a police delay, they may be unhappy with other aspects of police services. If citizens feel that police could have done more had they arrived sooner, they may hold police accountable for the lack of desired results. On the other hand, if police arrive rapidly, the citizen may be more forgiving, and attribute the lack of results to factors beyond police control. Thus rapid response is assumed to be necessary to sustain citizen satisfaction.

Response time is also assumed to be an important determinant of several other performance measures. One only needs to look at the plethora of resources allocated to decrease response time to realize how entrenched its assumed

importance is. Hypercube models of beat designs, automated vehicle locator systems, computer aided dispatch systems, and 911 systems, for whatever other reasons they may be justified, all promose more rapid response time. Underlying the dependency on response time is the assumption that it is important for apprehension of suspects, preservation of evidence, and reduced seriousness of citizen injuries.

As a performance measure, however, response time faces the dilemma presented above. Immediate response to all calls indiscriminately in order to satisfy citizens, even though rapid response time may not be necessary to make arrests, obtain evidence, or treat injuries, may obstruct productivity by taking cars out of service for low priority calls when rapid response to high priority calls is needed. This problem concisely emerged in a Kansas City, Missouri, Task Force in 1971. At that time, the prevailing policy in Kansas City, Mo., as Thomas Sweeney described it,

> stressed a generalized rapid response to all citizen calls for service. Call stacking was kept to an absolute minimum. Generally speaking, any available patrol unit would be dispatched if a call for service were waiting. Oftentimes, this would result in officers having to cross several patrol beats in responding. On busy nights, this practice would set off a billiard-like chain reaction in which patrol units would spend little or no time answering calls or performing protective patrol services in their assigned beat areas. (Board of Police Commissioners, Kansas City, Missouri, Police Department, 1977: Volume I, Methodology, pp. viii-ix.)

Hop-scotching throughout the city could also take cars out of their beats and out of service when a high priority service in their own beat was requested, requiring an officer in an adjacent beat further away to take longer responding to the priority call.

One solution to the billiard ball problem could include call prioritization and stacking. One reason this solution has not been done voluntarily, however, is police administrators' concern that citizen satisfaction would decline. However, the relationship of citizen satisfaction to response time has not been adequately tested. It has been assumed that rapid response to all calls is desirable.

Therefore, in 1973, the National Institute on Law Enforcement and Criminal Justice, with the Kansas City, Missouri, Police Department as the host jurisdiction, undertook the Response Time Analysis study. The findings of that study provide data to address the concerns of policing with respect to the operational impact of response time and its effect on satisfaction. The objectives of that study were as follows:

1) Analysis of the relationships of response time to crime outcomes of on-scene arrests, witness availability, citizen satisfaction with response time, and the frequency of citizens' injuries in connection with crime and noncrime incidents.

2) Identification of problems and patterns in reporting crime or requesting police service.

By reviewing the findings of this research, this paper will explore the issues involved in sustaining citizen satisfaction with response time, identify the types of calls to which response time is an effective determinant of other outcomes, and propose some of the implications to response priorities and manpower allocation.

METHODOLOGY

In order to test the assumptions, the 207 beat watches (an 8-hour tour of duty in a specified patrol beat in Kansas City, Missouri) were rank ordered on

the basis of robberies and aggravated assaults, and observers accompanied the field officers assigned to the highest ranking 27th percentile beat-watches. The target area represented an inner city high crime area in several respects. Education and income were lower. The proportion of black citizens was higher. More target beats (43 percent) were from Central Patrol Division than any other division. Age and population did not differ significantly for target versus nontarget beats.

Although sampling design was based upon optimizing sample size at minimum cost, and although there is potential bias in the target areas, the areas selected were probably the most appropriate given the concerns of the study. Smaller inner city beats are more likely to have more rapid response to the types of calls to which rapid response is important. Thus, the assumptions regarding response time were tested in the area where the operational importance of response time *a priori* would be the highest.

The sample was biased in favor of the most serious types of calls (robberies and assaults) because it was felt those calls were the calls to which rapid response was most germane, although they occurred less frequently. However, while the bias increased the number of applicable calls, the sample size for more typical calls was more than sufficient. Data were collected for 949 Part I crimes, including 10 rapes, 127 robberies, 84 aggravated assaults, 352 burglaries, 297 larcenies, and 79 auto vehicle thefts. There were 352 Part II crimes, including 59 nonaggravated assaults, 104 vandalism, 33 forgeries, frauds, and embezzlements, 17 weapon possession, 37 drunkenness (no longer an offense in Kansas City, Mo.), 58 disturbing the peace, and 20 disorderly conduct. Thirty-one other Part II crimes were excluded from analysis because of the diversity of cases with small sample sizes. Examples include arson, narcotics

violations, sex offenses, gambling, bomb threats, nonpayments, trespass, extortion, and city ordinance violations.

The largest class of cases were noncrime calls for service. There were 5,794 noncrime calls compared to 1,308 crime calls. Complete data were collected for 1,104 noncrime calls for service. However, in 876 additional cases, citizens would not be contacted for interviewing, and 970 cases were excluded from complete data collection by sampling to eliminate an unnecessarily heavy workload on interviewers for calls which already had an abundant sample size. In addition, officers who were accompanied by an observer also responded to 2,844 calls for which no caller was contacted. Field response times were obtained, but dispatch and reporting data were unavailable. Data were not collected for calls which were not citizen generated.

The complete noncrime calls were classified into four general categories. Crime control calls included potential crime calls such as suspicious party, prowlers, obtaining follow-up information on previous crimes, subsequent and warrant arrests, recovered property, and offenses handled informally by the officer at the scene. There were 328 cases. Peace maintenance calls were primarily disturbances. These cases were subdivided into two categories. Confrontation disturbances included such calls as fights, threats, yelling and screaming. Nuisance disturbances consisted of such calls as loud noises (stereos, barking dogs), juveniles, and obscene phone calls. There were 460 peace maintenance cases. Social service calls included medical cases (sick calls, diabetics, injuries, animal bites) persons locked out of houses, cats in trees, and any other problems citizens felt were appropriate for police to resolve. There 170 cases classified as social service calls. The final category was traffic regulation. With 146 cases, it consisted of injury and noninjury accidents, intoxicated drivers, and assist a motorist (if congestion was occurring).

All crime and noncrime cases were also classified as either involvement or discovery cases. Discovery incidents were those detected by a citizen after they had occurred unobserved or unreported. Involvement incidents were those in which a citizen saw, heard, or was otherwise involved in the event during its occurrence. If an incident was witnessed and reported to police, it was classified as involvement. If an incident was witnessed by a person who did not report it, and it was subsequently discovered and reported, the case was classified as discovery. Noncrime cases were difficult to classify because the only event which could be identified was the citizen's subjective desire for service. Loud stereo music, for example, did not require police to respond until a citizen was annoyed enough to report it. However, cases which resulted from a citizen's decision to call were treated as involvement cases in the analysis.

Data were collected from three sources. Observers riding with field officers collected travel time data; analysts collected dispatch time data from tape recordings made in the department's Communications Unit; and interviewers collected reporting time data from victims and other citizens who had reported incidents to police.

With information obtained by the field observers at the time of incident reporting, tape analysts could locate these calls on tapes which corresponded to the observed crimes, and interviewers could contact the citizens associated with the observed calls. By tying the data collection process together, response time could be calculated for particular calls from the time they originated until an officer had concluded his investigation. Field data were collected from March 1, 1975 until January 2, 1976, while the other data collection processes extended into the spring of 1976.

Field Observations. Civilian field observers rode four, 8-hour tours of duty each week with police officers assigned to the city's upper 27th percentile of beat-watches, based upon 1974 robbery and aggravated assault data. Observers recorded times documenting officer dispatch, response, arrival, and citizen contact at the incident scenes. Pulsar watches with digital displays were used to record these times. Descriptions of on-scene activities such as arrests, the administration of first aid, and requests for ambulances were obtained along with the identities of crime victims and persons who reported the incidents to the police.

Tape Content Analysis. The Communications Unit of the Kansas City, Missouri, Police Department records all telephone conversations between citizens and dispatchers and radio conversations between dispatchers and field officers. Using information provided by the field observers, analysts were able to locate the recorded conversations corresponding with the incidents for which the field observers had collected data. Analysts recorded times pertaining to the initial connection between citizens and dispatchers, the length of time necessary for citizens to explain the nature and location of an incident, and the length of time required for a dispatcher to assign a field officer to a call.

Citizen Follow-up Interviews. Using the identities determined by the field observers, the citizens who were victims of observed crimes, who had reported incidents, or requested police service were contacted for interviews. Interviewers obtained data for determining the approximate time the crime had occurred or was discovered and how much time had elapsed between when the citizen discovered an incident or was free from involvement in an incident and then reported it to police.

Interviewers also questioned citizens about their expectations of police service, their satisfaction with police response time, and any problems they encountered when attempting to contact the police. If a citizen was injured during the commission of one of the observed incidents and taken to a hospital, the hospital was contacted about the length of stay required for the citizen. Interviewers also collected information about the social characteristics of citizens interviewed.

FINDINGS

Citizen satisfaction with response time was measured by asking citizens, "How satisfied were you with the time it took the police to arrive after you called? Were you ... very satisfied, moderately satisfied, slightly satisfied, slightly dissatisfied, moderately dissatisfied, very dissatisfied?"

In general, citizens were very satisfied with police response time. Approximately 87 percent of the citizens expressed some degree of satisfaction. For Part I crimes, 70.2 percent were very satisfied. Part II crimes had a slightly higher "very satisfied" rate of 72.3 percent, and noncrimes were slightly lower with 68 percent very satisfied. Approximately 13 percent of the respondents expressed some degree of dissatisfaction. Very few expressed extreme dissatisfaction. Those responding that they were very dissatisfied included 5.7 percent for Part I crime, 4.4 percent for Part II crime, and 6.2 percent for noncrime calls. The fact that citizens are satisfied with response time in most instances suggests that citizen satisfaction with response time is not a major problem. While it is not unreasonable to assume that there are cases in which officers do procrastinate unnecessarily in responding to a call, in those few instances where satisfaction is low, consideration should also be

given to other factors which may affect satisfaction with response time besides response time itself.

The Response Time Analysis Study considered a number of variables which might explain citizen dissatisfaction with response time. Since satisfaction is a subjective variable, several other subjective variables were considered possible determinants of satisfaction. Citizens may not accurately perceive police response time. A citizen's involvement in or anxiety about the incident may cause a distortion of the sense of time, and the level of satisfaction may be based on the perceived rather than the actual response time. Furthermore, the level of satisfaction may be relative to the expected response time. A response time which highly satisfies a citizen in one situation may dissatisfy a citizen in a more urgent situation in which the citizen expects faster service. Satisfaction may also vary by the impact the citizen thinks response time has on the outcome of the incident. Citizens who think response time is important may attribute the lack of certain benefits to slow response, and satisfaction with response is lower. Expected response time may also be shorter and perceived time longer in those cases in which citizens think response time is important to the outcome. Nevertheless, actual response time may still have an effect on satisfaction. Although citizens' perceptions of time may be inaccurate, there may still be a resemblance to actual response time.

Several social characteristics of the respondents were also considered on the assumption that citizens of varying social characteristics could have different reactions to similar situations and therefore have varying levels of satisfaction. Twelve social characteristic variables were included as follows: 1) the length of residence in Kansas City, Missouri; 2) the length of time at the present address; 3) the population of the place where the citizen lived

most of his or her life; 4) whether the citizen owned, rented, or boarded his or her residence; 5) the marital status of the respondent; 6) the socioeconomic status of the respondent as measured by the Duncan index; 7) the age of the respondent; 8) the highest level of education completed; 9) whether or not the respondent was the head of the household; 10) total family income; 11) race; and 12) sex. However, these variables had minimal influence on citizen satisfaction with response time and will not be discussed further.

Finally, the analysis controlled for the type of call, since reporting time, police response time, citizens' perceptions and expectations of response time, and citizens' assessment of the importance of response time could all vary by the type of call.

The most important factor affecting citizen satisfaction was the perceptions and expectations citizens had of response time. A perceptions and expectations index was formulated by combining an indicator of perceived response time with an indicator of expected response time. Perceived response time was obtained from the question, "About how long did it take for the police to arrive after the call was made?" Expected response time was obtained from the question, "About how long did you expect it to take the police to arrive after the call was made?" The difference in the perceived and expected time provided a measure of whether the citizen thought response time was faster or slower than expected. This difference was then divided by the expected time to determine how much faster or slower response time was than expected. The rationale for the division was based on the assumption that the effect of the difference on satisfaction would vary by the proportion of expected time. For example, if a citizen expecte the police to arrive in 40 minutes, and perceives them to take 45, the

dissatisfaction may be less than if the citizen expects the police to arrive in 10 minutes when they take 15 minutes. Although the delay in both cases is 5 minutes, the delay is only 13 percent of the expected time in the first case, while it is 50 percent of the expected time in the second case. The greater the proportionate delay is, the less satisfied the citizen may be.

Analysis supports the assumption. The findings indicated citizens were satisfied when they perceived the police to arrive as soon or sooner than they expected. If the citizen thought the police officer took longer than expected. satisfaction with response time decreased. The effect of a delay varied according to a citizen's expectations. If a citizen expected response to take a long time and thought the officer arrived a little late, the citizen was not too annoyed, but if the citizen expected a quick response, slight delays seemed more serious, and satisfaction dropped.

The expectations and perceptions of response time varied slightly between Part I, Part II, and noncrimes. For Part I crimes, the average perceived time was 14 minutes, with 50 percent perceiving response time to be 10 minutes or less. For Part II crimes, citizens thought police took about 12 minutes, with 50 percent thinking it took 8 minutes or less. For noncrimes, citizens perceived police response to be about 13 minutes, on the average, with half perceiving arrival time to be within 10 minutes. The average expected time for Part I crimes was 23 minutes, with 50 percent expecting 10 minutes or less. For Part II crimes, expected time averaged 12 minutes, with 50 percent expecting 8 minutes or less. The average expected response time for noncrimes was 18 minutes, with 50 percent of the citizens expecting the police to arrive within 10 minutes. Although the means differed substantially, the medians indicate

citizens expected and perceived response to be about the same for Part I and noncrime incidents, and slightly shorter for Part II crimes.

On the average, citizens thought police took about a third more time than expected to arrive at the scene. The mean of the perceptions and expectations index was .399 for Part I crimes, .318 for Part II crimes, and .395 for noncrimes, indicating that perceived response time was 1.399, 1.318, and 1.395 times longer than expected time for Part I crimes, Part II crimes, and noncrimes, respectively. However, the median was 0 for all three types of calls, indicating that in 50 percent of the calls, perceived response time was less than or equal to the expected response time.

Dispatch and travel times were the two factors affecting the perceived response time consistently. Other factors appeared to distort perceptions in Part I crime. If citizens concerned with Part I crimes thought faster response might have made a difference to the outcomes, they tended to exaggerate police delay. Respondents of discovery crimes and involvement larcenies also tended to exaggerate police response time. For noncrimes, citizens thought police took longer for involvement confrontation disturbances, discovery crime control, and discovery traffic incidents.

Explanations for expected police response times were not apparent from the data. There was some variation in expected times by type of call. Expected time was longer for discovered crimes than involvement crimes. For noncrimes, discovered crime control and discovered traffic cases had longer expected response times than other noncrimes. Also, citizens who reported crimes more rapidly expected response to be faster. However, much of the variance in expected police response time remained unexplained.

An attempt was made to explore the relationship between the dispatcher's message to the caller and expected response time. However, policy in Kansas City, Mo. at the time of data collection was to respond to all calls immediately, and the dispatch message to callers was always some variation on, "the officer will be there as soon as possible." Therefore, no tests could be made. The possibility of the dispatcher affecting the expected police response time by giving the citizen a reasonable time in which to expect the officer is a policy implication which should be explored, however. If dispatchers can effectively improve expectations, field officers might also improve perceived response time by calling arrival time to the citizen's attention. If police dispatchers can establish reasonable expectations and accurate perceptions on the part of citizens of the actual quality of service, then citizen satisfaction with response might be sustained without unnecessarily rapid response to low priority calls. The Wilmington Split Force Experiment supported this hypothesis (Tien, 1977: pp. 5-24 to 5-26), and it might provide greater effectiveness and efficiency in operations to other departments who choose to implement it.

In addition, the same principle may apply to other dimensions of police service. Taking time to explain to the citizen what efforts are being made to resolve the incident and why some leads aren't being pursued may be as important to citizen satisfaction as effective police operations.

However, the data from the response time study also indicates that citizens do recognize when certain operational strategies are not necessary - at least with respect to response time - and they don't expect unnecessarily rapid response. The second most important determinant of satisfaction with response time was how important citizens thought response time was to the outcome of

the situation. Citizens were asked, "If the police had arrived more quickly, do you think it would have made a difference to the outcome of the incident?" Citizens who thought faster response time could have made a difference to the outcome of the incident were less satisfied with response time than those who thought it could not have made any difference. Citizens who thought faster response time could have made a difference to the outcome of the incident also reported that the police took longer than expected to arrive. Thus, citizens who thought faster response time could have made a difference frequently had a second reason for feeling dissatisfaction - the police took longer than expected.

However, most citizens did not think faster response time could have made a difference. In 826 Part I crimes, 85.6 percent said faster response would not have altered the results of the incident. Out of 248 Part II crimes, 81 percent said it would not have mattered, and for 1,081 noncrimes, the same statistic was 76.2 percent.

Citizens were most likely to think response time could make a difference in Part I involvement crimes, Part II involvement crimes (except for involvement drunkenness or involvement disturbing the peace), and noncrime involvement peace maintenance and involvement crime control calls. The reasons citizens gave for thinking faster response could have made a difference included: a) the suspect might have been apprehended; b) the presence of the suspect warranted faster response; c) there was potential for injury; and d) the situation had quieted. Reasons citizens felt faster response time could <u>not</u> have made a difference included: a) the incident was already committed and the suspect gone; b) the incident was undetected for a period of time, and the suspect was already gone; c) response time was fast enough; d) the suspect was still on scene when the police arrived; and e) it was not a rush situation.

A third factor affecting citizen satisfaction for Part I and Part II crime was reporting delay. Citizen satisfaction with response time increased as reporting delay increased. This relationship suggests citizens recognize the consequences of their own delays and tend to be more tolerant of police response when their own delays render it ineffective.

These findings are most instructive when compared with the effects of response time on other crime outcomes tested in the response time study. Citizens generally thought faster response could not make a difference to the outcome of the crime. Analysis of arrests also indicated that response time was seldom the determining factor in arrests. The on-scene arrest rate was 11.9 percent for Part I crimes. Since several categories of Part II crimes were defined only when an arrest was made (examples include disturbing the peace, weapon possession, drunkenness, and disorderly conduct), analysis of response time and arrest was meaningful only for 54.6 percent of the cases (including nonaggravated assault, vandalism, and forgery, fraud, and embezzlement). Of these, the on-scene arrest rate was 31.1 percent. However, most of these arrests could not be attributed to response time. Other factors contributing to arrests included: 1) The suspect was apprehended by a citizen or private security guard prior to police involvement: 2) The suspect's name or address was provided by the victim or witness; 3) The suspect was immobile due to injuries received during the commission of the crime; and 4) The suspect turned himself over to the police. When arrests for these reasons were excluded, the response-related arrest rate was only 3.7 percent for Part I crimes and 5.6 percent for Part II crimes.

Citizens also thought faster response could have made a difference for

involvement crimes. The same was true for arrests. Response-related arrests occurred only for involvement crimes. While involvement drunkenness and disturbing the peace incidents were not analyzed because they all had arrests, citizens were less inclined to think response time mattered for drunkenness and disturbing the peace. Although arrest was not a germane outcome to noncrime calls, the incidents which intuitively would be most likely to escalate into serious crimes, i.e., peace maintenance and crime control incidents, were also incidents for which citizens thought faster response was most important to the outcome. These findings indicate a correlation between objectives of police response and the criteria citizens use to evaluate in what type of incidents response time is most important. The subjective reasons citizens gave (the suspect was already gone, the crime was detected after occurence) further substantiate the correlation.

The same is true for witness availability. Witnesses were available in 20.8 percent of the Part I and Part II involvement crimes. Only for Part I crimes did witness availability vary according to response time. Incidents in which the probability of finding a witness can be affected by response time are a subset of the cases in which citizens think response time is necessary indicating that citizens may not perceive witness availability as an important outcome of response time. Nevertheless, the probability of finding a witness is increased in cases in which citizens think rapid response is important and in which the probability of a response-related arrest can be affected by response time.

Just as citizens seemed more tolerant of police response time when reporting time was long, reporting time was crucial to arrests and witness availability outcomes. The effect of police response time on arrests is dependent on

reporting time. Beyond a reporting delay of 5 minutes for Part I involvement cases, the probability of a response-related arrest does not change with police response time. For Part II crimes, the reporting time beyond 5 minutes substantially weakened the effect of police response time, although faster police response after a 5-minute reporting delay still improved the probability a little. Witness availability is also highly dependent on reporting time. For Part I and Part II involvement crimes, reporting time was more strongly related to witness availability than police dispatch or travel times. The longer the reporting delay, the less likely the police would find a witness. Rapid response in order to sustain citizen satisfaction in circumstances in which the citizen renders rapid response an ineffective operational strategy by reporting delay is not necessary because citizens are more tolerant of police delays when they delay reporting the crime.

In addition, police dispatch and travel times were not strongly related to citizen satisfaction at all. Only for Part I crimes was police dispatch and travel times directly related to citizen satisfaction. However, most of the effect of police response time on citizen satisfaction was through citizens' perceptions of response time, and the effect of perceived response time on citizen satisfaction was relative to expected response time. Thus, the impact of police response time on satisfaction appears to be fairly indirect.

These findings suggest criteria by which calls can be classified on the basis of priority. High priority calls would consist of involvement crimes which were reported within 5 minutes. The probability of arrest or witness availability appears to be high for rapid police response to these calls. Evidence indicates that a probability of a response-related arrest is especially high for involvement burglaries; and involvement forgeries, frauds, and embezzlements.

Furthermore, citizens tend to be dissatisfied if delay is extensive for calls meeting these criteria.

While there is no payoff in terms of arrest or witness availability to noncrime calls, citizens also seem to regard involvement peace maintenance and involvement crime control calls as high priority. These incidents would also be high priority in order to sustain citizen satisfaction and possibly to inhibit an incident from escalating into a serious crime. Finally, there may always be a handful of citizens to which rapid response is expected regardless of the potential payoff. Higher citizen satisfaction would be increased if resources permitted immediate response to those calls.

No relationship between response time and length of hospital treatment for injuries could be established. However, the exploratory nature of this aspect of the response time study precludes a definite conclusion to delay response to injury calls. Incidents with reported injuries should probably remain high priority until further and more refined research can identify the effects of delay on injury victims.

The remaining calls consist of involvement incidents reported more than 5 minutes after occurrence or discovery incidents. These would be low priority because the probability of making an arrest or finding witnesses is nil. The findings indicate that citizen satisfaction could be sustained if the dispatcher informed the callers of when to expect the field officer, and the field officer could indicate the appointed time is correct upon contacting the citizen.

The implementation of a priority system would provide substantial flexibility to police administrators to reallocate resources. Rough projections

from the Response Time Analysis study statistics indicate that by using a priority system immediate response to calls would be substantially reduced. After deducting discovery cirmes and involvement crimes reported after 5 minutes, only 18 percent of the Part I crimes calls would be classified as high priority because of the potential for arrest. Only 18 percent of the Part II crimes would be high priority after the cases defined by arrests and cases reported after the median reporting time for each type of crime were deducted. The potential to increase the probability of witness availability by rapid response would be present in 37.0 percent of the Part I crime calls and 26.9 percent of all crime calls. Injuries in which the victim was not already hospitalized at the time the incident was reported occurred in 9.7 percent of the Part I crimes, 21.4 percent of the Part II crimes, and between 5.4 and 16.6 percent of the noncrime calls.

Estimates for noncrime calls must be interpreted with caution because of the sampling. However, generalizing from the complete cases, approximately 61.6 percent of the noncrime calls would be involvement peace maintenance or involvement crime control to which citizens think rapid response is important. Apparently, rapid response may be necessary to more noncrime than crime calls. However, only 23.4 percent of the citizens thought faster response could have made a difference to the outcome of the incident, and another 6.8 percent said response was fast enough. Therefore, in only 30.2 percent of the noncrimes is rapid response actually necessary to sustain citizen satisfaction. However, further research is necessary to develop criteria which would distinguish involvement peace maintenance and crime control calls for which rapid response is necessary from those for which it is not necessary. The citizens' wishes may be the guideline.

With the decrease in the number of calls to which officers would have to be prepared to immediately respond, latitude would exist to reassign police

officers to experimental programs to develop alternative techniques of proactively confronting crime. How these officers were used would depend on the ingenuity of a particular police administration. If alternative programs proved ineffective, then rapid police response would be one operation in which costs could be reduced.

CONCLUSIONS

The findings and implications of the Response Time Analysis study indicate that response time is not necessary to sustain citizen satisfaction in most cases. Response time *per se* has little influence on citizen satisfaction. More important are other subjective factors, such as citizens' perceptions and expectations of response time, and citizens' assessment of the importance of response time to the situation. Conveniently, citizens are able to discriminate the types of situations in which response time can and cannot affect outcomes such as arrest and witness availability. Through the courtesy of realistically informing the citizens of the status of their calls and when to expect service, citizen satisfaction can be sustained without unnecessarily rapid response to situations in which rapid response has no real benefits.

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