Allocation of Personnel: Investigations

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Abstract

Allocation of manpower for law enforcement has traditionally focused on the uniformed patrol division. Personnel allocation formulas record required staffing needs by responsibilities, calls for service, population, demographics, and response times. However, little focus is put on determining the number of investigative staff needed. The investigative component is often looked upon for case clearance rates or Uniform Crime Reporting (UCR) for the resolution of criminal cases. How it is then determined when the investigative division should receive that additional augmentation of manpower? The focus of this study is to identify the needs of the investigative units by showing supportive data for recommending standards for increases within the various investigative units in Charlotte County, Florida.

Introduction and Literature Review

According to FBI crime statistics, the national clearance rate in 2006 for violent crimes is 44.3% and property crimes are at 15.8%, but many law enforcement agencies are finding it more difficult to reach this considerably low number. Crime continues to rise and in response to increased caseloads more and more agencies inactivate cases almost immediately if there are little to no leads to follow also known as solvability factors (Swanson, Chamelin, & Territo, 1996). If not closed immediately, they may be assigned back to a patrol officer, thus not getting the time and attention a reported crime requires bringing it to a successful closure. Customarily, only offenses of a violent nature or those with high potential for closure receive investigative follow up beyond the original report.

With the population growth within Charlotte County as well as that around the State of Florida, we, much like other agencies, have found ourselves increasing the size of our Agency. Many agencies have spent endless hours analyzing data and putting together various strategic plans for overall personnel increases and road patrol expansion. Most of this is determined through law enforcement to population ratio or the number of calls for service with response times factored in. The question that continues to arise though is when is it time to increase the detective division?

An increase in the detective division has often been a response to crime trends and community outcry for perceived lack of attention by law enforcement (Gribble, 1996). Law enforcement agencies must maintain a balance. Many agencies have often been criticized for over or under staffing various components within the organization. So how this is then determined?

In 1985 the planning and research department of the Pompano Beach Police Department utilized case assignment criteria and time needed to investigate cases. The Florida Chapter of Association of Police Planning and Research Officers (APPRO) continued with the research and developed a two-part formula to calculate investigative

personnel needs. (Gribble, 1996). A very similar formula was provided by FDLE in their Effective Budgeting for Criminal Justice Agencies training (Liquori, 2007).

To complete the formula, APPRO also calculated State average time consumption for investigative cases as follows (Gribble, 1996);

- Burglary   5.48 hours
- Robbery   8.90 hours
- Property crime   3.24 hours
- Person's crime   6.99 hours
- Aggravated assault/battery   3.55 hours

This average was however concluded in 1985. Are these averages still valid? With the development in technology we are able to do things faster now. On the other hand, we can also do more. This study will focus on the investigative time consumption for cases and validation of the previous studies findings.

Methods

To find the average investigative time for a case a select group of detectives from various units within the Charlotte County Sheriff's Office to include Major Crimes, Criminal Investigations, Economic Crimes, and Computer Crimes were asked to complete case tracking forms. These forms included the case number, type of offense, and the dates and times the cases began and ended.

This was a three month study beginning on June 15, 2007 and ran through September 15, 2007. The investigators kept a daily log of their investigative time per case assigned as well as administrative (meetings, roll call, misc tasks, etc.), court, and training time. This log was then turned in each week and the information was put into a database.

At the conclusion of the three months, the data was "cleaned up" for date and time accuracy and consistency in crime types assuring all cases numbers tracked are titled with the proper crime. The information was then extracted from the database in three separate reports, by case number, crime, and investigator. The data was analyzed and cases that were opened and closed within the three month study period were identified. Averages were calculated for crime types and then placed in crime categories and averaged again. These numbers were factored into the formula utilizing the Charlotte County Sheriff's Office case assignment criteria and computed thus giving us our recommended minimum manpower per unit.

Results

During the three month period beginning June 15 and ending September 15, 671 cases were documented in the study. 487 cases were opened within the three month period and 276 were closed. Cases that were opened and closed within the three month period were identified and times captured and averaged. For the purpose of this

study a closed case included those that were closed via arrest, warrant request, exceptional, and unfounded where the investigation, for the most part, is successfully completed. Investigative time included crime scene investigation, follow up investigation, interviews, paperwork, travel time, and phone contacts.

Theses cases were then broken down by crime type and categories and averages obtained as follows:

Persons Crime

- Robbery (armed, home invasion, bank)   29.7 hrs
- Aggravated Assault/Battery   25.1 hrs
- Missing Persons   16.2 hrs
- Sexual Battery   15.6 hrs
- Lewd & Lascivious   6.8 hrs
- Child Abuse   3.8 hrs
- Child Pornography   8.9 hrs
- Death Investigation (suicides, unattended deaths) 13.8 hrs
- Homicide   146.7 hrs

Property Crimes

- Burglary   12.2 hrs
- Theft (grand theft, GTA)   6.74 hrs
- Robbery (strong arm)   10.5 hrs
- Missing Persons (runaways)   2.4 hrs
- Prescription Fraud   6.46 hrs

Economic Crimes

- Credit Card Fraud   17.58 hrs
- Forgery/Uttering   6.75 hrs
- Counterfeiting   14.35 hrs
- Identification theft   1.83 hrs

In order for the formula to calculate accurately, the crime types needed to again be averaged together based on what crimes are investigated by a particular unit. With the Charlotte County Sheriff's Office, we have specialized units that handle specific types of offenses, but there are some exceptions and overlap that need to be considered. For example, a property crimes detective might be called upon to investigate an armed robbery if person's crimes detectives are tied up on a homicide.

The cases investigated by the Investigations Division are the more serious or in depth crime types. For example, credit card frauds average 17.58 hours. The Investigations Division handles those with multiple cards or charges requiring more

investigative work, those that are minor, one to two charges, are often handled by a road patrol officer. If these are also to be assigned to the Investigations Division it may bring the average down, but increase the caseload thus balancing out.

Discussion

The results of this study have shown that with increases in technology and investigative techniques, the amount of time spent on a case has also increased. Although we can run more efficiently, with new databases and information sharing as well as forensic technologies, we can do so much more on any one case than we were able to do 22 years ago, but what of the validity of the formula?

Prior to the start of this study, in 2006 I began looking to determine if an industry standard for case assignment existed. Investigative supervisors and/or commanders with Sarasota County Sheriff's Office, Hillsborough County Sheriff's Office, Orange County Sheriff's Office, Collier County Sheriff's Office, Gainesville Police Department, St Johns County Sheriff's Office, Broward County Sheriff's Office, Tampa Police Department, and Pinellas County Sheriff's Office were spoken to.

As expected it was found that each agency manages their respective investigative functions differently. A common theme was identified though with how many cases are worked by property crimes detectives and major case detectives. Many of the agencies assign all their follow ups to an investigative component, but if there are no investigative leads identified, the case is automatically inactivated. Those with enough information to proceed are assigned to a detective.

The common theme or industry standard identified with Florida agencies was fairly consistent with those agencies spoken to. With regard to property crimes, law enforcement agencies are assigning between 12-15 cases per month per detective.

In order to maintain quality and high closure rates of investigations, it is important to keep the detectives caseload to a workable level. The difference between 12 and 15 does not seem immense, but when looking at the overall analysis of 144 to 180 cases per year, this shows a larger disparity.

So testing the formula against this standard with property crimes, by utilizing the formula and case assignment criteria utilized by the Charlotte County Sheriff's Office it was determined that a property crimes detective should carry a 13 case a month or 153 case a year caseload. This shows a consistency between practice and theory.

As expected Major Crimes Units carry a much smaller caseload. This is because the seriousness of cases investigated by a major case squad requires greater attention to detail with the investigations. They must also be able to divert attention at a moments notice to respond to the demands of a serious felony (i.e. homicide, child abduction, etc.). This cannot be done if a caseload is too high because of the seriousness of said cases.

The industry standard identified in Florida for major crimes is 6-8 cases per month or 72-96 cases per year per detective. Utilizing the formula and case assignment criteria from the Charlotte County Sheriff's Office, it identifies a 6 case per month or 72 cases per year per detective criteria, placing it on the low end of the industry standard showing a consistency between practice and theory.

This average caseload however, did not factor in homicide cases. With factoring in the average man hours used to investigate a homicide, it raised the average for persons crimes tremendously thus increasing the number of personnel drastically. Homicides in Charlotte County are not consistent from year to year. When determining the number of personnel required, per formula, the homicide cases and average man hours need to be calculated separately. As in the case of my agency, it would be more efficient to temporarily assign investigators as needed than to staff the positions.

Economic crimes are still in their infancy stages, but are here and will continue to grow. Most agencies do not yet have specialized units for this type of crime. Those that do, cannot handle the cases assigned and therefore as a standard will not investigate certain offenses. Others find the statute of limitations running out before they can complete the investigation. The standard is that there is no standard. Most agencies are still trying to figure out how to combat this growing trend.

A report by the Federal Trade Commission on Fraud and Identity Theft ranked Florida 12 out of the 50 states for said crimes. Punta Gorda (Charlotte County), Florida was ranked 11 in the nation per 100,000 capita. This just confirms that what we already know about the problem we are now facing regarding increased economic based crimes in Florida.

Economic crimes tend not to be difficult, but can be very time consuming with regards to following paper trails. This in itself often drags out an investigation and even more so when an alleged perpetrator has tried to cover their tracks. Long term or large fraud/embezzlement cases can take up to six months or longer to complete. Even a short term, simple credit card or worthless check case, can take a month or longer to complete with obtaining subpoenas and records. And once obtained can lead to additional subpoenas.

When looking at the actual time spent investigating an economic crime an average of 10.13 hours (average hours of all ECU cases) were exhausted. This includes only short term cases. Those long term cases that were followed during the study, still remained open and under investigation at the conclusion of the three months. To be a long term investigation, the information that has been collected indicates that these cases are either a scheme to defraud, embezzlement, or racketeering. Most of these investigations have a large amount of currency stolen and/or multiple victims.

Using the formula only calculating short term investigations it is recommended that a detective carry a 9 case per month or 112 cases per year per detective caseload. To calculate the average of a long term investigation, the cases would have to be followed from beginning to end not placing any time period on the study. This tends to be a challenge as some of these cases can continue for a year or more. Another potential problem is that often some cases start off looking small and mushrooming out, thus making identifying a long term case for tracking purposes difficult.

Computer Crimes currently investigates online frauds, child pornography related to computers, conducts forensic examinations on computers, and assists various units with video and/or surveillance and electronic equipment. The unit also investigates online sexual predators.

Computer Crimes are a unit with no known standards. Computer forensics can take months to complete one hard drive depending on the size and how elaborate or

pass protected a system is. Online predator investigations can also take several months.

With the current publicity on child pornography and online predators, partnerships are being formed with the FBI and Secret Service to partake in online predator and child pornography task forces. Such partnerships are very important and thus will also lead to additional casework.

At the conclusion of the study, deficiencies were found in how the data was tracked in relation to computer forensic work. With the way in which the data was tracked, manpower allocation utilizing the formula was unable to be calculated providing an accurate average. The work performed by a computer forensic investigator can be captured and potentially inputted into the formula, but the information is needed to be captured by hard drives analyzed rather than cases because it was discovered that the forensic investigator was still analyzing data long after the case was indicated as closed.

Hours for online investigations must also be calculated and averaged to be added in as part of their workload. Our agency currently tries to dedicate 8 hours a week to this. As with other investigators, there are several tasks that they are pulled away to complete that are difficult to track.

Through this research we have been able to identify potential industry standards in Florida for property crimes of 12-15 cases per month per detective or 144-180 a year and 6-8 cases per detective per month or 72-96 a year for major cases. With Economic Crimes one common theme is that there is no standard set throughout the State of Florida to draw upon.

With comparing these numbers to those calculated by the mathematical formulas (appendix A-D), recommended caseloads for property crimes were similar in numbers. Major cases were in line and economic crimes had nothing for comparison. The data and how it was collected and developed during the 1985 studies by Pompano Beach Police Department and the Florida Chapter of Association of Police Planning and Research Officers (APPRO) was unable to be verified. It has also not been determined if APPRO is still a functioning organization as any information on APPRO indicating they are in existence today was located.

Chief William Liquori (Altamonte Springs P.D., retired) stated that his formula (Appendix A-B) was developed many years ago by his staff. He was surprised to learn of the formula developed by APPRO and was also unfamiliar with the organization. He used it during his tenure in Altamonte Springs and said he did not know of anyone ever challenging its validity, but never had any challenges to using it when determining staffing needs. He was unsure of when the formula was developed.

Deputy Chief Deal (Altamonte Springs P.D.) said that they still use this staffing formula today and it is working well for them. According to him, the formula was introduced to Altamonte Springs Police Department by Chief Liquori back in 1988. He too knew of no other law enforcement agencies that utilize any such formula.

Recommendations

There are many different ways to determine manpower when looking at the Patrol Division or if you determine your personnel by a population to deputy/officer ratio. Here we have identified a way to establish investigative needs. How accurate it is, is up for interpretation. This formula can also be manipulated dependant upon the allocation of time factor. This is determined by command as to how many hours per day they expect detectives to dedicate to their cases.

The figures set forth in this case study set the investigative time as 62.5%. The remaining time, 37.5%, is spent on administrative duties such as meetings, roll call, meal breaks, vehicle maintenance, training, court, etc. If these numbers are adjusted in the formula, the outcome will also be different. Utilizing the 8.4 hour day worked by detectives with the Charlotte County Sheriff's Office, this shows the detective actually doing case work for an average of 5.25 hours a day. The remaining 3.15 hours is spent on the various administrative duties, which is not uncommon.

Being unable to validate the mathematical formula, if adopted by an agency, agency heads will have to look upon this formula as a deciding aide. These formulas do however take into account many valid factors when determining staffing needs. In any case it is important for agencies to come up with staffing plans addressing investigative needs as well as other divisions and reevaluate these standards. According to Elliott Gribble, in 1995 the St John's County Sheriff's Office utilized this formula in a similar study and found the formula to be accurate.

If the formula is true to accurate, then the industry standard identified might need to be looked at a little more closely. Are we spending enough investigative time on a property crimes case? This could explain the 44.3% violent crimes to 15.8% property crimes clearance rates.

Captain William Prummell has been with the Charlotte County Sheriff's Office since 1992. He has worked in several divisions to include Road Patrol, Criminal Investigations, Major Crimes, Crimes against Children, Economic Crimes and Internal Affairs. Bill currently is the Investigations Division Commander. Bill has a bachelor's degree in Criminal Justice from St. Leo University and a Master's degree in Business Administration from IMPAC University.

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Appendix A

Criminal Investigations Staffing Formula

(Explained)

A. Estimated assigned cases for fiscal year   _____
   This is the estimated number of assigned cases handled by the detective division
   during the fiscal year being evaluated. This information comes from Criminal
   Investigations Division computer systems.

B. Average time per assigned case (in hours)   _____
   This is the average time spent investigating an assigned case. This
   information is identified through the study.

C. Hours spent on assigned cases (multiply A x B)   _____
   When value A is multiplied by value B, we get the estimated total time
   encumbered by the Criminal Investigations Division investigating
   assigned cases.

D. Allocation of time factor   X _1.60_
  (62.5% on cases, 37.5% on administrative duties)
   This factor is determined by management and reflects their desired
   allocation of man hours. In this case, detectives are expected to be
   actively working assigned cases 62.5% of their shift. It is estimated that
   38.5% of the shift is consumed doing administrative tasks (meal breaks,
   meetings, roll call, vehicle maintenance, etc.). The allocation of time
   factor varies depending on the percentages.

E. Minimum man hours required for staffing (multiply C x D) _____
   By multiplying value C by D, we arrive at the minimum man hours
   required to accomplish our goal.

F. Number of work days per year   _____
   This is the number of workdays in the Division per year.

G. Average Daily workload in hours (E divided by F)   _____
   By dividing value E by value F, we arrive at the number of man hours
   required each workday.

H. Number of work hours per shift   _____
   This is the number of hours each shift works during each workday.

I. Number of work units needed per day (G divided by H)   _____
   By dividing value G by value H, we arrive at the number of work units
   needed to staff the Detective Division.

William Liquori

Appendix B

Criminal Investigations Division Availability Worksheet

(Explained)

This worksheet will determine the actual number of days you should expect to receive from an average employee. This figure will help determine the number of employees you need to hire to staff the required work units as determined on the Criminal Investigations Division Workload Computation Worksheet.

- The first thing computed is the number of hours an average employee works during the year.

Total hours per year (365 X hours in workday)   _____

> This is the total number of hours an employee could work in one year
> without any time off.

Subtract the following in hours:

> Regular days off   _____
>
> Paid leave (sick, vacation, etc.)   _____
>
> Holidays off   _____
>
> Other leave (wellness, military, training, etc.)   _____
>
> Total   _____

Available hours worked per employee   _____

> This is the actual number of hours (on average) an employee is
> available to work.

- Now the "availability factor" is computed by dividing the total number of hours needed to staff the required work units by the available hours worked per employee. The "availability factor" represents how many employees are needed to staff one work unit.

Number of hours required for one work unit   _____

Number of available hours worked per employee (from above)   _____

Employee availability factor   _____

> The employee availability factor is computed by dividing the number of hours
> required for one work unit by the number of available hours worked per
> employee. Again, this tells us how many employees are needed to staff one
> work unit.

- Now we determine the total number of employees needed to staff the Division. Data from the Criminal Investigations Staffing Formula is used for this computation.

Work units needed per day (Value I from CID Staffing Formula) _____

Employee availability factor (from above) _____

Number of employees needed for staffing _____

By multiplying the total number of work units needed each day by the employee availability factor, we determine the total number of employees needed to staff the Division.

William Liquori

Appendix C

Workload Computation Worksheet

Total hours per year (365 x 8)   _____

Subtract regular days off in hours   _____

Subtract sick time in hours   _____

Subtract holiday hours   _____

Subtract vacation hours   _____

Subtract training time in hours   _____

Subtract military time in hours   _____

True available time per detective =   _____

To determine the staffing requirements for detectives, perform the following mathematics

A. Determine the number of hours required
(from detective workload computation sheet)   _____
B. Determine available time per detective, in hours
(from this worksheet)   _____
C. **Divided value A by value B**   _____

Value C is the required staffing of detectives based upon the managerial allocations set forth in the worksheets. Naturally these figures would be increased if figures for all of the sections in investigations were added. This process does not address supervisory staffing requirements.

Elliott Gribble

Detective Workload Computation Sheet

A. Estimated number of assigned cases for fiscal year   _____

B. Average time (in hours) per assigned case   _____

C. Multiple A times and B for total hours worked   _____

                (Value C is time required to process assigned cases)

D. Establish the goal number of hours per day to
    Allocate to working assigned cases   _____

E. Determine percentage of time spent working assigned cases
    (i.e. value D divided by hours worked)   _____

F. Divide E into 1.00 to determine multiplier   _____

G. Multiply value C by the multiplier   _____

    Value G is the total number of detective hours you must budget for the agency.

    In order to determine value D, you must make some managerial projections and assumptions.

Elliott Gribble