This chapter covers crime analysis products that assist police agencies in their crime reduction accountability processes and meetings (i.e., Compstat and Compstat-like programs). As discussed in Chapter 3, crime analysis plays a significant role in crime reduction accountability processes. More specifically, crime analysts assist with the development and measurement of crime reduction goals, provide regular products to monitor the success of short- and long-term crime reduction activities, assess whether the crime reduction efforts are effective, and determine whether the crime reduction goals are being met.

The content in this chapter has been adapted from Boba and Santos (2011) and covers the following topics: 1) a brief discussion of crime reduction accountability to provide context of the role of crime analysis, 2) crime reduction goal development, 3) crime analysis for weekly action-oriented meetings, 4) crime analysis for monthly evaluation-oriented meetings, and 5) crime analysis for assessment of crime reduction goals.

There are many different crime analysis techniques, statistics, and final products that can be created for accountability that range from very simple to very complex. In administrative crime analysis, just as in tactical and strategic crime analysis, it is important to balance using difficult and complex analysis techniques with providing products that are relevant and helpful to police personnel and decision-makers. Based on my work since 1994 with police agencies in implementing effective accountability practices, I have carefully selected specific accountability products and techniques from the wealth of potential products to present in this chapter. Hundreds of analysts and police agencies have used these products and techniques successfully, so a crime analyst who starts with these accountability products will serve the police department well.

INTERNATIONAL CRIME ANALYST PERSPECTIVE

Tyr Steffensen
Law Enforcement Analyst
Oslo Police District
Oslo, Norway

Station command tasked the CAU with the following: “If we were to change the boundaries inside our district at the station level based on the current distribution of crime types, what (Continued)
would be the effect on our case load for investigation, as well as the number of incidents the uniformed division would have to handle? We queried our RMS for two sets of data, both comprised of assaults, robberies, disturbances of the peace, pickpocketing, and narcotics cases. One query returned the set of cases the stations had investigated; the other, the set of cases that had taken place inside the current boundaries, regardless of where those cases had been investigated. We then contrasted these data sets with suggested boundaries based on city geography and the current concentration of crime types in the downtown area of Oslo. We also counted calls for service originating inside the different areas, sorted by three levels of severity, and illustrated the potential increase. We chose to present our data in an infographic-style poster. The product served as a reality check and provided a unified situational awareness for command going forward in the redistricting process.

Crime Reduction Accountability

In this book, accountability refers to the process by which police personnel are held responsible for implementing strategies to reduce crime and disorder in the community. The underlying theme of accountability for crime reduction is that individuals, units, and divisions within a police agency must take responsibility for implementing crime reduction strategies beyond answering calls for service and investigating crimes. As discussed in Chapter 3, the trend for police departments to have a formalized structure of accountability for facilitating crime reduction began in 1994 with the New York Police Department's (NYPD) Compstat program. What started as a program in one department has become a standard practice within many police departments.
around the world; however, most do not follow NYPD’s model but have adapted it to their own needs. In the last decade, stratified policing (Santos & Santos, 2015b) has expanded and specified the framework of Compstat to stratify accountability by the different types of problems and ranks within the police organization. Consequently, the discussion of accountability in this chapter will also be stratified to address crime analysis products for different purposes.

Crime reduction accountability processes in a police organization center on creating realistic expectations, documenting the crime reduction activities, systematically reviewing the progress of crime reduction activities, and evaluating the success of crime reduction efforts at each level. An accountability process ensures that the entire organization implements and maintains crime reduction efforts consistently and effectively. The role of crime analysis in the accountability structure is significant. Crime analysts create routine products that are used to identify problems and direct resources, hold managers accountable for their effectiveness in reducing crime, and determine the effectiveness of the organization as a whole in reducing crime and disorder.

In both Compstat and stratified policing, regularly scheduled meetings make up the formal structure police departments create to facilitate their accountability process. Each type of meeting includes a standard list of attendees, a consistent agenda, and standardized crime analysis products. For Compstat, meetings might be once or twice a week, once every 2 weeks, or once a month. For stratified policing, there is a defined structure of three types of meetings—daily, once a week, and once a month—all of which are implemented in concert with one another.

Importantly, not only does accountability occur during these meetings, but it is also when crime reduction activities are evaluated. Crime analysts play a central role in preparing the products and presentations that are used to monitor and assess crime reduction efforts. While the previous chapters discussed specific products used to direct crime prevention and crime reduction efforts of police, this chapter covers the specific products that are created to ensure people are implementing strategies correctly and to assess whether their efforts are working.

Each type of accountability meeting is different in its purpose, in the types of crime reduction activities that are discussed, and in the rank and type of personnel who attend. Daily and weekly meetings are action oriented because they are used to ensure that police personnel are responding (i.e., the “action”) immediately, collaboratively, and appropriately. Monthly meetings are evaluation oriented because they are used to assess the overall effectiveness of short-term crime reduction as well as the progress and effectiveness of long-term crime reduction efforts. The following is a brief description of each type of meeting:
• **Daily accountability meetings** facilitate action-oriented accountability for strategies implemented for immediate and short-term activity. The primary type of daily meeting is the “shift briefing” in which supervisors give patrol officers their crime reduction “mission” for that day based on crime analysis.

• **Weekly accountability meetings** facilitate action-oriented accountability within and/or among divisions (e.g., patrol, investigations, crime prevention, and media relations) so that police employees can come together to develop, coordinate, and assess strategies implemented for short-term activity. The main focus of weekly meetings is on patterns, as they require a coordinated response. These meetings are used for district commanders to “report out” what they are doing and for their bosses to ensure they are implementing the right number and type of responses, as well as decide whether the responses are working.

• **Monthly accountability meetings** facilitate evaluation-oriented accountability within patrol districts and investigations, as well as across the entire police department. Patrol and criminal investigations commanders are held accountable for their specific geographic area or division by the police chief. The meetings are used to discuss whether all short-term crime reduction activities are effective rather than if responses to individual patterns are effective. That is, the discussion is focused on the combined responses to all patterns to determine if crime is going down and/or are there fewer patterns emerging. The meetings are also used to discuss whether long-term problems are emerging from unresolved short-term problems (e.g., residential burglary patterns are occurring in a neighborhood month after month) and to monitor the progress of ongoing long-term crime reduction strategies (e.g., determining whether implementing crime prevention through environmental design (CPTED) in an apartment community has reduced crime and disorder incidents). In addition, every 12 months the monthly meeting is used for evaluation-oriented accountability for all types of activity at the broadest level. That is, long-term trends of crime and disorder based on the crime reduction goals are examined to determine if all the efforts are making a difference, whether adjustments need to be made, and/or if new crime reduction goals need to be defined.
INTERNATIONAL CRIME ANALYST PERSPECTIVE

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Crime Analyst
Royal Canadian Mounted Police
Canada

My role as a crime analyst in an urban detachment is primarily assisting frontline officers for the purposes of crime reduction and public safety. There are instances where I have been requested to assist the senior management with analyzing calls for service for the purposes of reviewing resource allocations. I obtained all calls for service within a Zone in our jurisdiction over 3 years and categorized the calls into the types of calls (e.g. property, traffic, assist, person violent crime, Controlled Drugs and Substance Act (CDSA) and breaking them down into frequency by days of the week, time of day and depicting them in a graphic format. The graphs were embedded into a written report highlighting the salient parts of the analysis for the purposes of ensuring that resource allocation is efficient within the Zone, considering that resources are limited and required in other Zones as well.

Crime Reduction Goal Development

Before accountability can be carried out, the police department must have a common purpose and goals for its crime reduction activities so that individuals know what they are expected to do. Instead of a police chief just saying, “We will reduce crime,” formalized crime reduction goals are used to guide personnel and to provide specific measures to assess the agency’s success in reducing crime and disorder. These goals are different than goals and objectives traditionally formulated in police organizations for a 3-to-5-year strategic plan that address the overall growth of the organization, how many officers will be needed, new units and/or divisions, and equipment needs.

To make sure that crime reduction goals are actionable and relevant in the day-to-day operations of the police department, each goal’s outcome is specified, along with its success indicators, baseline and target measurements, strategies, and measurements of performance. Importantly, the outcomes, strategies, and outputs are differentiated in order to assess both the process (i.e., whether strategies were implemented correctly) and impact (i.e., whether the strategies decreased crime), as discussed in Chapter 12.

While crime analysts should not be responsible for developing crime reduction goals on their own, they will serve an important role by providing the department’s leaders analysis results that help them to decide which crimes and types of disorder to select as goals, what the indicators and targets should be, and what level of reduction the agency should try to achieve. The following are descriptions of each component and the role of the crime analyst:
• **Crime reduction goal**: This is the desired outcome and is generally stated. It denotes a specific type of activity (e.g., violent crime, burglary, disorder) as well as the geographic area (e.g., countywide, citywide, district, beat). Most likely, very large and/or diverse jurisdictions will develop goals for geographic regions separately. The crime analyst would provide trend analysis for several years of different types and subtypes of crime and disorder for the entire jurisdiction and by geographic area to support initial goal development.

• **Success indicator (i.e., outcome)**: This component specifies the type of activity that is used to measure the impact of the crime reduction strategies. The purpose of this component is to denote the specific measurement relevant to the crime reduction goal. The crime analysts would make suggestions for these measures as the “data expert” of the police department, knowing that using general measurements such as Uniform Crime Report (UCR) Part I Crime categories can mask changes in the specific crimes that are being addressed. For example, instead of using all UCR Part I violent crime (homicide, rape, robbery, and aggravated assault) to measure a goal to reduce violent crime, the success indicator measures specific types of violent crime that the agency has identified as concerns, such as non-domestic aggravated assault and street robbery. Similarly, instead of using data for all burglaries to measure a goal pertaining to property crime and burglary, the success indicator can measure residential or commercial burglary separately, or even more specifically, it can measure residential burglary at single-family homes versus multi-family homes (i.e., apartments).

The success indicator also specifies the level of desired success. This is normally depicted as the percentage of decrease in the type of activity (e.g., a 10% decrease). The percentage of value is developed based on historical trends of the activity, the number of police resources available, and a qualitative decision by the police department’s leaders based on their knowledge and experience about what is a realistic crime reduction goal. The trend analysis conducted by the crime analyst would provide insight to what is a realistic goal for the coming year. Lastly, in some cases, geographic areas might be specified within the success indicator, which is different than specifying the geographic area in the entire goal statement. The
geographic area within a success indicator means that even though the overall goal may be for the entire jurisdiction, the responses are to be prioritized in a particular area. Or it can mean that even though the goal may be for one precinct within a large jurisdiction, the responses will be prioritized in a particular beat. This too would be informed by crime analysis that identifies which area has the highest number of a specific crime or is at highest risk for a potential increase.

- **Baseline:** This is the initial measurement of the success indicator. The actual value is listed, as well as the time period under consideration and the method of computation. The measurement can reflect frequency or counts of a year of data, or it can reflect a rate or an average over several years. This would depend on the data that is available and the nature of the activity. The crime analyst leads the development of the baseline measure and identifies these numbers through the trend analysis conducted for the previous components.

- **Target:** This is the desired level of success (i.e., reduction of crime) and is computed based on the percentage indicated in the success indicator and the baseline measurement. It is typically computed for 1 year, which is the evaluation period of the crime reduction goal. The crime analyst very easily computes the target once the previous components are designated.

- **Strategies:** The strategies listed here for each crime reduction goal address crime reduction efforts that the police department will implement simultaneously at each level of the organization. That is, a crime reduction goal is selected because it is important to the police department and the jurisdiction; thus, the crime or disorder is addressed at immediate, short-term, and long-term levels. Because there are different strategies that are effective at different levels, this component designates what specific responses will be systematically implemented at each level. The crime analysts have a small role in choosing the strategies, but they may assist by providing insight about evidence-based policing research—for example, the information provided in Chapter 3.

- **Performance indicators (i.e., outputs):** These elements specify the activity to be measured and are developed based on the strategies outlined in the
previous component. Examples include patrol officer activity, such as hours of directed patrol, as well as the number of arrests and cleared cases, which are measures of strategies used to address crime patterns. They also include rate of success in addressing specific types of problems, such as percentage of patterns and problem locations that were resolved successfully, and an analysis of the operational costs of implementing particular responses, such as overtime pay for officers and equipment purchases. The crime analyst would work with the leadership to decide the best measures for each strategy and data availability. That is, some things may not be currently tracked, and new data may need to be collected. Recall the “data modification subcycle” described in Chapter 4.

Table 16.1 is an example of a crime reduction goal and its components. Because crime reduction goals are broad in nature and may be broken down to multiple categories within the success indicator, an agency should have between three and five goals a year, but not many more.

When crime reduction goals are formulated, resulting in the implementation of crime reduction strategies, the crime analyst conducts tactical and strategic crime analysis to guide and support the department, using the techniques and products discussed in the book thus far. The rest of the chapter covers additional crime analysis products created specifically for accountability in weekly and monthly meetings; they are based on the same techniques just discussed but have different uses.

**Crime Analysis for Weekly Action-Oriented Accountability Meetings**

Crime analysts should not spend time creating products for weekly meetings that show weekly or monthly crime or disorder counts. Because accountability in weekly meetings is action oriented, weekly statistics are not necessary because they do not direct short-term responses. Thus, most of the crime analysis results that are discussed in weekly meetings have already been produced as part of tactical crime analysis (i.e., repeat incident reports and crime pattern bulletins)—another reason why weekly statistics are not necessary.

For example, the weekly repeat incident reports discussed in Chapter 8 are used to identify locations for response. These same weekly products are also used to determine whether responses are effective since the product always includes the last 28 days of calls for service. Thus, if a location was responded
## Table 16.1 Example of Crime Reduction Goal Components

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Goal: Violent Crime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal</td>
<td>Reduce violent crime throughout the jurisdiction</td>
</tr>
<tr>
<td>Success indicator</td>
<td>Reduce non-domestic aggravated assault and street robbery by 10% (focus on District 1 and District 2)</td>
</tr>
<tr>
<td>Baseline</td>
<td>Non-domestic aggravated assaults: 550</td>
</tr>
<tr>
<td></td>
<td>Street robbery: 450</td>
</tr>
<tr>
<td></td>
<td>Baseline time period: Jan–Dec 2016</td>
</tr>
<tr>
<td>Target</td>
<td>Non-domestic aggravated assault: [550 * .90 =] 495</td>
</tr>
<tr>
<td></td>
<td>Street robbery: [450 * .90 =] 445</td>
</tr>
<tr>
<td></td>
<td>Target date: Jan–Dec 2017</td>
</tr>
<tr>
<td>Strategies</td>
<td>Identify and respond to patterns (short-term)</td>
</tr>
<tr>
<td></td>
<td>Identify and respond to problem areas (long-term)</td>
</tr>
<tr>
<td></td>
<td>Identify and address repeat offenders</td>
</tr>
<tr>
<td>Performance indicator</td>
<td>Number of patterns responded to and number resolved</td>
</tr>
<tr>
<td></td>
<td>Number of problem areas responded to and crime reduced</td>
</tr>
<tr>
<td></td>
<td>Number of repeat burglary offenders responded to</td>
</tr>
<tr>
<td></td>
<td>Number of directed patrol hours in patterns and problem areas</td>
</tr>
<tr>
<td></td>
<td>Number of arrests and clearances</td>
</tr>
<tr>
<td></td>
<td>Number of known offenders contacted</td>
</tr>
<tr>
<td></td>
<td>Cost analysis of responses deployed</td>
</tr>
</tbody>
</table>

To one week, the next week’s product would be used to determine if the response was effective (i.e., no more calls at that location in 2 weeks). So a separate accountability product is not necessary for repeat incidents because the information from the original product can be used for responding as well as for accountability.

In addition, because crime analysts are constantly updating crime pattern bulletins as new crimes happen, the bulletins themselves tell police leaders whether the responses are being effective (e.g., no more crime in the pattern for 2 weeks would be considered a success). Recall the process of numbering and dating crime pattern bulletins from Chapter 11. Thus, no new statistics are needed to determine whether responses to a particular pattern are working. However, the crime analyst would create a weekly product for pattern accountability that includes statistics on the listed performance measures for the pattern responses to be discussed. This
information would be gathered both by the crime analyst and individual patrol managers or with software that tracks crime reduction responses (e.g., an agency management system as discussed in Chapter 11). Table 16.2 shows responses implemented for four active patterns to be discussed in the weekly meeting.

Looking at the table, we can see that pattern 35E has been updated five times (see Chapter 11 for a review of bulletin numbering) with 11 additional crimes and that it has been active for 45 days. We also see that there have been significant resources (e.g., 200 directed patrol hours) expended in response to the pattern. Because crime is still occurring, the action-oriented accountability would likely be to continue the response. Pattern 36, on the other hand, has had no more crimes in 14 days. Typically, 2 or 3 weeks without additional crimes is recommended as a successful response to patterns, so a decision to discontinue response and note it as a success would likely be made by police leaders. Lastly, Pattern 38B has been updated twice and has had five additional crimes in 20 days. It has the fewest responses of any of the four patterns, which would likely prompt the patrol bureau commander to ask the district captain responsible for the pattern why more resources have not been expended since crime is continuing. There might be a good reason for the discrepancy, but by creating this table and comparing the response levels of the active patterns, the police leaders can ensure that resources are being used wisely and appropriately, make changes immediately, if necessary, and recognize successful efforts.

A similar type of product may be created for repeat incidents; however, the responses to those problems tend to be more varied, so a more creative way of measuring the level of response would need to be developed based on the nature of the repeat incidents addressed. For example, domestic violence repeat incident response data might include hours of contact with the family, types and number of referrals made for social services, arrests, restraining orders, and so on. In summary, because crime analysts are conducting action-oriented products every day, there are only a handful of products that would be created specifically for a weekly accountability meeting and would focus on response,

<table>
<thead>
<tr>
<th>Bulletin #</th>
<th>Days Active</th>
<th>Additional Crimes</th>
<th>Directed Patrol Hours</th>
<th>FI Cards Taken</th>
<th>Known Offenders Contacted</th>
<th>Reverse 911</th>
<th>Potential Victim Contacts</th>
<th>Arrests</th>
<th>Clearances</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-35E</td>
<td>45</td>
<td>11</td>
<td>200</td>
<td>15</td>
<td>4</td>
<td>1</td>
<td>25</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2017-36</td>
<td>14</td>
<td>0</td>
<td>65</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>12</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>2017-37A</td>
<td>17</td>
<td>3</td>
<td>84</td>
<td>10</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2017-38B</td>
<td>20</td>
<td>5</td>
<td>21</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Crime Analysis for Monthly Evaluation-Oriented Accountability Meetings

On a monthly basis, accountability meetings are evaluation oriented so crime analysts examine long-term trends by month to monitor the effectiveness of responses for repeat incidents, crime patterns, and long-term problems. The purpose of a monthly evaluation is to ensure that crime reduction efforts are being consistently applied and appear to be working at all levels. For short-term activity, monthly meetings are used to monitor the overall levels of specific types of calls for service and crime addressed. Similar to how pattern bulletins that have already been created are discussed at weekly meetings, strategic analysis products previously produced that support the problem-solving process (as described in Part VI) would be discussed in monthly meetings. Monthly meetings are used to monitor short-term problems until the crime reduction goals are evaluated and long-term problems until it is decided that a full evaluation of the responses to that particular problem should take place.

Because crime counts can vary widely from month to month, crime analysis for monthly accountability focuses on examining trends instead of numerical differences or changes in percentage from month to month, year to date, or from year to year. The goal for the crime analyst is to create monthly crime analysis products that are standard, relevant, straightforward, and not unnecessarily complex or statistical. Consequently, this section provides examples of a set of products and explains how each one was created and its specific purpose in the monthly accountability process. Each product could be used to examine any number of crime and disorder types.

Crime and Disorder Monthly Trend Charts

A crime and disorder monthly trend chart is a bar chart that is created each month for the most recent 6 months compared to the same 6 months of the previous year. It contains a trend line for each time period and the percentage of change from the first to second 6-month period. The purpose of this product is to monitor crime reduction efforts for one type of activity over the last 6 months in comparison to the same time last year, as well as to account for seasonal changes (i.e., more crime in the summer). A police leader would use it to address any possible deficiencies with the implemented responses and to determine if further discussion and/or action was required during the following month. Working with many different police departments, I have found that 6 months is the appropriate amount of time to use for monitoring monthly
trends. Longer time periods are more appropriate to evaluate crime reduction activities more fully, as will be discussed later in the chapter.

The same chart would be created for each monthly meeting, with the months changing to include the most recent 6 months (i.e., **rolling time period**). In addition, the same chart might be created for different geographic areas and for different crime and disorder activity designated in the crime reduction goals. Thus, a crime analyst may produce multiple versions of this single product for each monthly meeting.

Figure 16.1 shows a bar chart with the counts and trend lines for a “selected” crime type. We can see that while the crime counts increase and decrease each month, which is normal, the overall trends show that the 2016 6-month trend was both higher in frequency (i.e., between 150 and 200) and flat across the 6 months, while the 2017 6-month trend is lower (i.e., ranging from about 130 to 85) and is decreasing. The overall percentage of change shows that there are 39% fewer crimes in June through November 2017.

In an accountability meeting, a police leader would look on this as a positive result. However, looking at the individual bars, he or she might point out that after a decrease in each month from July to October 2017, November is higher. Leaders may hold individuals responsible for making sure this increase does not continue in the subsequent months.

A monthly trend chart is also useful to monitor on a monthly basis different types of calls for service and crime activity for each problem level and for the crime reduction goals. See the following examples:

**Figure 16.1 Monthly Trend Chart**
• Repeat incidents: Charts for domestic violence calls for service in the entire jurisdiction and by geographic area (e.g., district) could be created to monitor the effect of the responses to domestic violence repeat incidents by district and across the jurisdiction.

• Patterns: Charts for street robbery in the entire jurisdiction and/or by geographic area could be created to monitor the effect of the response to street robbery crime patterns and incidents, as well as compare progress across geographic areas.

• Problems: A chart for apartment complex burglaries could be created to monitor the effect of responses to a specifically selected problem of burglaries in apartment complexes.

• Crime reduction goals: Using the crime reduction goal example from the beginning of the chapter, charts would be made for non-domestic, aggravated assault, and street robbery separately to monitor the goal's success indicators. These products could also be broken down into geographic areas to determine if one area was doing better or worse than the others.

The next product is a combination bar and line chart that is created each month for the most recent 6 months and includes a selected crime or disorder activity by month for the current 6 months, the previous 12 months, and an average per month for the last 5 years. The purpose of this product is to anticipate what level of activity to expect over the next 6 months based on the current 6 months, the last 12 months, and the last several years. Including an average can be helpful if the previous 12 months were unusually high or low.

Figure 16.2 includes the same data as Figure 16.1, as well as the counts of crime for June through May of the previous year and the average for each month for the previous 5 years. The chart indicates that current crime counts are lower than last year and the last 5 years. However, based on figures for the coming 6 months, the department might expect an increase in crime (i.e., note how the 2016 and 5-year averages start to increase in December), even if the overall numbers are lower than in past years. As with the previous chart, the purpose is to create a product with a straightforward interpretation to monitor trends. It is not created to systematically predict future crimes, so a complex predictive analysis is not necessary.

**Problem Comparison Chart**

The strategies listed for a crime reduction goal often designate long-term responses to problem locations, areas, and offenders. Analysis and progress reports for selected problems that have already been created will be discussed in the monthly meeting, so the purpose of a problem comparison chart is for police leaders to compare multiple locations, areas, and offenders at the same
time in order to get a broader view. The product allows police leaders to both monitor the targeted crime counts individually and compare the problems by placing them side by side.

This product is a bar chart with multiple locations, areas, offenders, and their counts for the most current 6 months compared to the same 6 months in the previous year. Similar to the previous products, each month a new chart would be created with the most recent 6 months (i.e., rolling time period). A trend line is not used in this product because it reflects problems and not sequential months, but a percentage of change is depicted for the difference between the 6-month totals.

Figure 16.3 depicts 10 problem areas that have been identified through an 80/20 analysis and selected for long-term crime reduction. It shows that eight problem areas have seen reductions in crime, that Problem Areas (PA) 2 and 5 have seen increases, and that the overall reduction for the 6-month period for all the problem areas is 20%. These results indicate that the current crime reduction strategies implemented in a majority of the problem areas seem to be working, but the efforts in PA 2 and PA 5 need improvement.

This product is used to monitor different types of calls for service and crime activity as well as different types of problems. It can also be created using rates instead of counts of crime. Some examples follow:
• Problem locations: Charts might be created for assaults at selected bars, loud parties at apartment communities, and disorder activity at budget motels.

• Problem areas: Charts might be created for problem areas of robbery, aggravated assault, and disorder calls for service. Remember that problem areas may be defined at different scales, so a chart could be created by street block, by a cluster of blocks, or by various-sized areas. The most important aspect of creating this product for problem areas is to have areas with predefined and static boundaries so the crime and disorder activity can be counted accurately and consistently over time.

• Problem offenders: This chart might include the number of arrests and/or police contacts for problem offenders. Note that this product would primarily be used and reviewed monthly for offenders that were being contacted and not for all offenders on a particular problem offender list.

• Rates: Charts might be created using crime per population of the problem area, loud parties per apartment unit, and assaults per occupancy of the bar.
Crime Pattern Trend Map

In addition to charts, maps can be used to monitor short-term and long-term activity, as well as the police department's crime reduction goals. The crime pattern trend map is used to determine whether patterns themselves are clustering over several months and becoming long-term problem areas. It is a single-symbol map depicting all crime incidents of one type over a particular time period. On the map, ellipses mark crimes that are part of pattern bulletins. The important distinction between this and a basic single-symbol or density map is that the crimes within specific patterns are marked. A crime analyst that does not do pattern analysis will not be able to create this product. As with all the previous products, the time period for the monthly map is rolling and includes 6 months of both crime incident and pattern data. Note that these maps make the most sense for crime patterns that cluster in space, such as street robbery, residential burglary, and residential theft from vehicle. Additional information (not shown here for clarity) that might also be included on the map for each pattern includes the pattern number, date of bulletin publication, and whether there was an arrest.

Figure 16.4 shows that there were 11 patterns during this time period and that five seem to have reoccurred in the same area. Based on their own judgment, police leaders would decide whether to continue to monitor this cluster of patterns over the next several months or to begin treating it as a long-term problem area since it appears that the current short-term responses are not working.
Crime Analysis for Assessment of Crime Reduction Goals

Because the crime reduction goals are developed for 12-month periods, every 12 months a crime analyst will create additional products in order to assess the performance indicators (i.e., outputs) and their impact on the success indicators (i.e., outcomes) of the crime reduction goals. The data used for assessment come from a variety of sources, including documentation of crime reduction strategies; operational data on costs for implementing responses such as personnel time and equipment; crime and disorder data from the police department; and comparison data from neighboring jurisdictions, the state, and national sources.

Performance Indicator (Output) Products

There are many types of products that could be created to assess whether crime reduction strategies have been implemented successfully and have been cost effective. They would represent both the content analysis of crime reduction activities (e.g., arrests, patrol responses, clearances) and a cost analysis of the strategies implemented. Figure 16.5 is one example of a performance indicator product that is created for yearly accountability. It includes data for the performance indicators of one crime reduction goal and covers responses to repeat incidents, patterns, and problems. Crime reduction activities are discussed in more detail on a weekly and monthly basis, so at this level of accountability, the activities are aggregated and represent totals for the entire year under examination. A separate product would be created for each crime reduction goal. Depending on the nature of the goal, a separate product for each patrol geographic area or division (e.g., patrol vs. investigations) might also be created.

From top to bottom, Figure 16.5 shows outputs for the 12-month period:

- The number of individual patterns of crime responded to
- The average number of hours of directed patrol expended by pattern
- The number of arrests made, based on pattern response
- The number of cases cleared, based on pattern response
- The number of individual problem areas responded to
- The average amount of directed patrol in each problem area per week
- The total number of arrests made in the problem areas
- The number of problem offenders that were contacted
The values depicted in Figure 16.5 may not make much sense here in this textbook, but in practice, the police agency’s leadership would have an idea what these numbers mean in the context of their resources and expectations for the crime reduction activities throughout the year. If the police department continues the same crime reduction goal for the following year, the crime analyst would create a product that compares the values for the current and previous year.

To complement the analysis of responses, it is also important to examine how much the crime reduction activities cost since the responses are implemented in addition to the normal police business of answering calls for service and investigating crimes. A cost analysis would examine the number of personnel hours (both scheduled and overtime) and other costs required for crime reduction activities at each level (e.g., deployment of bait vehicles, purchase of additional equipment). These cost analyses may be conducted for one crime reduction goal at a time or for all short-term strategies generally (e.g., pattern responses) within the time period of the goal. The role of the crime analyst in the cost analysis is significant in determining the appropriate data and statistics to use, as well as how the information would be presented. The crime analyst would not conduct the cost analysis alone but would work collaboratively with sworn administrative, administrative data, and budget personnel.

Figure 16.5  Performance Indicators (Output): January–December 2017

- Patterns
- Patterns: Directed Patrol Hours Per Pattern
- Patterns: Arrests
- Patterns: Cases Cleared
- Problem Areas
- Problem Areas: Directed Patrol Hours Per Week
- Problem Areas: Arrests
- Problem Offenders
Success Indicator (Outcome) Products

To assess each crime reduction goal, the first step is determining whether the police department has met the percentage of reduction it designated as the success indicator by computing the actual percentage of change between the baseline and current counts. Whether or not the agency meets its crime reduction goal, additional analysis is required to help understand the context of the results. That is, just because a police department sees a 10% decrease in violent crime does not mean it was due to its own crime reduction efforts. It could be that neighboring police departments are seeing the same reduction in violent crime because it was a particularly cold and rainy year and people were not outside offending as much. Similarly, the agency may have seen a reduction in all types of crimes, even those that were not specifically targeted. Thus, the purpose of the products presented in this section is to assist the crime analyst in telling the “story” behind the statistics by making comparisons with previous years, other crime types, and other jurisdictions in order to have confidence in the overall results.

Crime and Disorder Long-Term Trend Charts

The first crime and disorder long-term trend product is a line chart that depicts the frequency of crimes by month for 3 years of data, the linear trend line for that entire period, and the percentage of change between each year and the next. The purpose of this chart is to evaluate the impact of all the police department’s strategies for a particular crime reduction goal beyond 2 years. Three years of data are used to see how the most recent year is related to the previous 2 years by month to provide context. Between 3 and 5 years are typically used for this product, but no fewer than 3 years should be used.

The same chart would be created separately for each type of crime or other activity identified as a crime reduction goal (i.e., separate charts for non-domestic aggravated assault and street robbery). Separate charts could also be created for different geographic areas in order to make long-term comparisons among areas, especially those noted in the success indicator component. Figure 16.6 shows that in 2017 when the police department began responding to residential burglary, there was a drop in crime that continued throughout the year. The percentage of change from 2015 to 2016 showed an 8% decrease, but from 2016 to 2017, there was a 27% decrease. A visual inspection of the chart as well as the results of the differences in percentage seem to indicate that there was an impact that coincided with the police department’s response.

The next product is a chart using the same residential burglary data as Figure 16.6, but it overlays the years on the 12-month calendar, which allows for an assessment of the seasonal differences. It is recommended to have no more than 3 years on a single chart, as the lines become confusing and cluttered. If the crime analyst wants to consider more than 3 years, averages might also be used, similar to those in Figure 16.2.
Figure 16.7 shows that while the current year has the lowest counts, the seasonal patterns appear similar to previous years. Each year, there is a drop from January to February, and the activity increases through May with a decrease in June. What this chart shows is that even though crime reduction activities were implemented in 2017 and crime was lower, the seasonal patterns were not affected. Police leaders may consider adjusting and improving their response during those months in 2018 because even though crime is lower overall, improvement can still be made in the summer months, when there is an increase every year.

**Crime Trend Comparison Charts** To assist with determining whether decreases are occurring because of the police department's own crime reduction activities and not for other reasons (e.g., spatial displacement, population growth, economy, or natural disasters), it is important to compare the crime reduction goals baseline and target data to other data, such as data from similar crime types that were not selected as crime reduction goals and data from other jurisdictions. These trend charts typically include 2 to 3 years of data and will depend on what the goal is and what data are available to the analyst. It is the crime analyst's responsibility to determine the best comparison and obtain the data necessary to create the product.

For example, consider a police department that saw a 20% reduction after responding to residential burglary as its crime reduction goal. In comparison, the department saw only a 5% reduction in residential thefts from vehicles,
and a neighboring jurisdiction saw a 7% increase in residential burglary over the same time period. Based on these results, police leaders might conclude that the reduction in residential burglary was, in fact, meaningful and due to the police department's responses. The fact that other property crime occurring in residential areas that was not addressed as a crime reduction goal had a much smaller reduction and a neighboring jurisdiction saw an increase implies that something different facilitated the 20% decrease in residential burglary. While these results do not absolutely prove the police department caused the reduction, the additional analysis makes reporting the 20% reduction much stronger than making it without any other comparisons.

Figure 16.8 is a chart that depicts monthly counts for residential and commercial burglary for the current year in comparison to the previous year. The crime reduction goal was to reduce residential burglaries, and the police department did not address commercial burglaries except to answer calls for service and investigate crime incidents (i.e., basic police services). The chart shows the percentage of increase and decrease for each type in the legend. A visual inspection of the chart shows that the monthly counts seem to have gone down for residential burglary when the responses began. The legend tells us that this was, in fact, true overall, in that residential burglary saw a 36% decrease from 2016 to 2017, while commercial burglary saw a 9% increase.
Figure 16.9 is a similar chart that compares the crime analyst’s jurisdiction with data from another jurisdiction. As discussed in Chapter 12, to compare jurisdictions with different populations, a rate is used instead of monthly counts because it is unlikely that crime analysts will find a jurisdiction almost identical in size and population to their own. Figure 16.9 shows the monthly rates of residential burglary for the two jurisdictions. In 2016, the crime analyst’s jurisdiction rate per 100,000 population has a similar trend as the comparison jurisdiction, but in 2017 when crime reduction strategies for residential burglary were implemented, there was a 23% decrease in the crime rate, while the other jurisdiction saw a 15% increase. Other charts with additional jurisdictions could also be created to strengthen the argument even more. It is important that the crime analyst selects other jurisdictions that—while maybe not similar in population—are similar in zoning (e.g., residential vs. commercial) and other characteristics (e.g., rural/suburban vs. urban/college town/vacation location).

Notably, population is not always the best for comparison of certain types of crime (e.g., commercial burglary). Unfortunately, it is difficult to get comparison measures from other jurisdictions, so population is often the most realistic and practical comparison measure. It may also be difficult to obtain
specific crime (e.g., residential burglaries at apartment communities) and calls-for-service information (e.g., disorder calls only) from other jurisdictions, so these products may sometimes have to be created by year with more general categories (e.g., all citizen-generated calls or all burglaries). Lastly, an analyst should be cautious when a jurisdiction’s population changes within the year (e.g., a college town where students leave in the summer) or is increasing or decreasing over several years (e.g., growth with new industry or decline because a large factory has closed). Because of these considerations, conducting the analysis and making conclusions based on more general data should be done very cautiously.

Yearly Comparison Maps It is also helpful for police leaders to use yearly comparison maps to visualize long-term changes in activity for accountability purposes. In order to see changes from year to year, the analyst creates separate maps for each year. Often in an annual accountability meeting, crime analysis products are presented with presentation software, so maps can be animated and changes over time can be seen more easily than in static form. Analysts might create quarterly or monthly maps; however, making 12 or 24 maps for animation instead of two is a lot of work for the analyst, so it should be done only when the results are meaningful.
Figures 16.10 and 16.11 are density maps of a selected crime for 2016 and 2017, respectively. The same products could also be created using a graduated-area map. The legends are not shown here, but remember from Chapter 6 that when comparing across time periods, “custom” legends should be created by the analyst so that each color category represents the same values in each map and the years can be compared. While the maps are shown here in black and white, they were originally created in color where the differences are more easily discernable. Looking at the two maps together, we can see a change in the density of the problem areas in the large circled area from 2016 to 2017; it shows the density of crime is lower, meaning there have been improvements in these areas. Additional yearly maps would be created to animate changes over time.
SUMMARY POINTS

This chapter presents an overview of accountability processes implemented for crime reduction in a police department, how crime reduction goals are developed, and specific crime analysis products that are created for weekly and monthly accountability meetings, as well as for evaluating crime reduction goals. The following are the key points addressed in this chapter:

- Administrative crime analysis is analysis directed toward the administrative needs of the police department, its government, and its community. It supports the internal operations of the organization as well as a police department's interactions with the community and other government entities.
Crime analysts assist with the development and measurement of crime reduction goals, provide regular products to monitor the success of short- and long-term crime reduction activities, assess whether the crime reduction efforts are effective, and determine whether the crime reduction goals are being met.

Regularly scheduled daily, weekly, and monthly meetings make up the formal structure that police departments create to facilitate their accountability process.

Daily and weekly meetings are action oriented because they are used to ensure that police personnel are responding (i.e., the “action”) immediately, collaboratively, and appropriately.

Monthly meetings are evaluation oriented because they are used to assess the overall effectiveness of short-term crime reduction as well as the progress and effectiveness of long-term crime reduction efforts.

To make sure that a crime reduction goal is actionable and relevant in the day-to-day operations of the police department, the outcome of the crime reduction goal is specified, along with the success indicators, baseline and target measurements, strategies, and measurements of performance.

The crime reduction goal is the desired outcome and is generally stated.

A success indicator (i.e., outcome) specifies the type of activity that is used to measure the impact of the crime reduction strategies.

The baseline is the initial measurement of the success indicator.

The target is the desired level of success (i.e., reduction of crime) and is computed based on the percentage indicated in the success indicator and the baseline measurement.

Strategies list the crime reduction responses that the police department will implement simultaneously for each level of activity. They are selected based on the particular type of crime or disorder problem outlined in the crime reduction goal.

Performance indicators (i.e., outputs) are a list of the activity produced in the crime reduction work of the police department.

The crime analyst creates a weekly product for pattern accountability that includes information about the implemented pattern responses to be discussed in the meeting. A similar type of product may be created for repeat incidents.

On a monthly basis, accountability meetings are evaluation oriented so crime analysts examine 6-month trends by month to monitor the effectiveness of responses for repeat incidents, crime patterns, and long-term problems. Because crime counts can vary widely from month to month, crime analysis for monthly accountability focuses on identifying trends instead of numerical differences or percentage of change from month to month, year to date, or from year to year.
• The crime and disorder monthly trend charts are bar charts that compare the most recent 6 months to the same 6 months of the previous year or that compare the current 6 months, the previous 12 months, and an average per month for the last 5 years. The problem comparison chart is a bar chart of each location, area, or offender, with crime counts for the most current 6 months compared to the same 6 months in the previous year. It allows for police leaders to compare multiple selected problems at once for 6 months.

• The crime pattern trend map is used to determine whether patterns themselves are clustering over time and becoming long-term problem areas. It contains crime incidents of one type over a particular time period. Ellipses mark those patterns of crime.

• Performance indicator products are created to assess whether crime reduction strategies have been implemented successfully and have been cost effective. They represent both the content analysis of crime reduction activities as well as a cost analysis of the strategies implemented.

• Success indicator products help determine whether the police department has met the percentage of reduction it established at initial goal development, as well as help understand the context of the results.

• Crime and disorder long-term trend charts evaluate the impact of all the agency’s strategies for a particular crime reduction goal. They either depict the frequency by month for 3 years of data or overlay 3 years of data on the 12-month calendar to determine seasonal differences.

• Crime trend comparison charts are used to help determine whether increases or decreases are occurring because of the agency’s own crime reduction activities or some other reason. These products typically include 2 to 3 years of data that compare monthly counts or rates of the goal’s success indicators to a relevant comparison (e.g., by crime type or other jurisdiction).

• Yearly comparison maps help police leaders visualize long-term changes in activity by geographic area.

**DISCUSSION EXERCISES**

Develop a goal with the following info.

**Exercise 1**

For the last 5 years, your police department has seen between a 5% and 10% increase in property crimes, particularly vehicle crimes (theft of and from vehicles). The problem is occurring across the entire city but especially in District 2 and District 4. You have unlimited resources to address this issue. Complete the crime reduction goal chart to the best of your abilities using this chapter as well as what you have learned in the entire book. Following each component, write a short sentence or two to explain your reasoning for each component.
Exercise 2

Over the past 3 years, your police department has seen a 40% total increase in burglaries, particularly those at single-family homes and retail establishments. The problem is occurring across the entire city. You have unlimited resources to address this issue. Complete the crime reduction goal chart to the best of your abilities using this chapter as well as what you have learned in the entire book. Following each component, write a short sentence or two to explain your reasoning for each component.

Exercise 3

Over the past 2 years, your police department has seen a 20% increase in robberies, particularly those occurring on the street (50% of all robberies) and at commercial places (30% of all robberies). Street robberies are predominant on the north side of the city, and commercial robberies mostly occur on the south side. You have very limited resources to address these crimes. Complete the crime reduction goal chart to the best of your abilities using this chapter as well as what you have learned in the entire book. Following each component, write a short sentence or two to explain your reasoning for each component.