

*Final Draft*



**JAIL  
STAFFING ANALYSIS**

*3rd Edition*

Rev. June 2016

*Final Draft*  
**Jail Staffing Analysis**  
*3rd Edition*

Rod C. Miller  
John E. Wetzel  
Jim Hart, CCE, CJM

***Contributors:***

Donald L. Leach II

Ralph E. Nichols

David M. Parish

Arthur P. Thompson, AIA

Richard E. Wener, PhD

This document was prepared under cooperative agreement number 07J61JSO from the National Institute of Corrections, U.S. Department of Justice. Points of view or opinions stated in this document are those of the authors and do not necessarily reflect the official position or policies of the U.S. Department of Justice. The authors permit reproduction of all or any part of this copyrighted material if appropriate attribution is given and if the material is not sold for a profit. The National Institute of Corrections reserves the right to reproduce, publish, translate, or otherwise use all or any part of this copyrighted material.

Copyright 2012, 2016, Rod Miller and John E. Wetzel

## Foreword

This third edition of the *Jail Staffing Analysis* was developed as an updates for the First and Second Editions of the Jail Staffing Analysis Workbooks published by the National Institute of Corrections (NIC) in 1988 and 2002. This third edition was developed by CRS, which has sole responsibility for its content.

Many legitimate methods may be used to conduct a jail staffing analysis. The first edition of this workbook presented a new methodology in an attempt to allow both the expert and the novice equal opportunities for success. It encouraged more jails to implement comprehensive staffing analyses, which have now become standard practice in many jurisdictions. The second edition of the workbook simplified the jail staffing analysis and allocation process, clarified terms, and incorporated the experience of the field in the 12 years since the first edition was published. This third edition draws upon 20 years of experience with the first two editions, provides expanded narrative where needed, and incorporates new tools and techniques.

The jail staffing methodology is different from the process recently developed for prisons<sup>1</sup> for many reasons. Where the needs of the two audiences coincide the methodologies have been coordinated.

The 3<sup>rd</sup> Edition presents a new format for the material. This document is a comprehensive in-depth guide for jail staffing analysis. It is supplemented by several tools that will assist in the implementation of staffing analysis techniques, including a workbook that is written specifically for the person(s) who are responsible for implementing the process. The authors have found that the amount of information and guidance needed to explain each element of the process requires more space. Therefore, the staffing analysis documents have evolved from a workbook to this in-depth handbook which is supplemented by a workbook.

While the procedures may initially seem complicated, experience has proven that the process is effective and rewarding. Jail managers have also discovered many secondary benefits from this process.

---

<sup>1</sup> Camp, Camille Graham, Patricia L. Hardyman, Robert May, George M. Camp. *Prison Staffing Analysis: A Training Manual*. National Institute of Corrections, U.S. Department of Justice. Washington D.C. December 2008.

## TABLE OF CONTENTS

Foreward.....	iii
Table of Contents.....	iv
Preface.....	v
PART I: Introduction and Overview	
1. Defining “Staffing Analysis”.....	1
2. Jail Staffing Issues.....	1
3. Symptoms vs. Causes: The Overtime Example.....	2
4. When to Use This Document.....	3
5. Benefits Derived from Conducting a Staffing Analysis.....	4
6. Who Should be Involved?.....	4
7. Jail Characteristics and Staffing Considerations.....	6
8. The Staffing Analysis Process.....	8
PART II: Step by Step Instructions	
1. Describe the setting.....	11
2. Chart activities.....	19
3. Develop a coverage plan .....	25
4. Evaluate the coverage plan.....	39
5. Develop schedules and calculate efficiency.....	44
6. Calculate Net Annual Work Hours (NAWH).....	57
7. Prepare a budget.....	72
8. Write the report.....	75
9. Implement and monitor.....	77
GLOSSARY.....	80
APPENDIXES	
Appendix A: Project Manager’s Guide.....	85
Appendix B: The Myth of Staffing Ratios.....	133
Appendix C: More on Net Annual Work Hours (NAWH).....	135
Appendix D: Staffing and the Courts.....	139
Appendix E: Standards.....	145
Appendix F: Using the Staffing Analysis Methodology to Analyze Overtime- A Case Study.....	161
Appendix G: Increasing Staff Efficiency by Managing Inmate Behavior.....	167
Appendix H: Evaluation Checklist.....	175
Appendix I: Forms.....	181
Appendix J: More on Scheduling and Scheduling Tools.....	187
Appendix K: Research on the Effects of Shift Work.....	199

## Preface

The publication was developed to help improve jail operations by improving jail staffing practices. It identifies a series of steps that build on one another to produce a comprehensive and innovative staffing plan. Users will find this document helpful in the following situations:

- **Creating** an initial staffing plan for a new facility
- **Conducting** a comprehensive staffing analysis for the first time.
- **Reviewing and evaluating** an existing staffing plan.
- **Revising** an existing plan in response to changes at the facility or in policy.
- **Finding efficiencies in current operations.**
- **Solving specific problems** with jail staffing and operations.
- **Making better use of existing staff.**

Effective staffing plans and practices go a long way toward achieving the jail's most important mandate: providing safety for staff, the public, and inmates. Good staffing improves a jail's ability to provide programs and services, decreases potential liability, and helps ensure that costly staff resources are used efficiently.

The Introduction of this document discusses the elements of a staffing analysis, describes the benefits derived from a comprehensive analysis, and sets the stage for using this document. It defines a staffing analysis and provides overview of staffing issues.

The next section introduces a comprehensive 9-step staffing analysis process that breaks the work into manageable tasks:

1. Describe the Setting
2. Chart Activities
3. Develop a Coverage Plan
4. Evaluate the Coverage Plan
5. Develop Schedules and Calculate Efficiency
6. Calculate Net Annual Work Hours (NAWH)
7. Prepare a Budget
8. Write the report
9. Implement and Monitor

Step-by-step instructions are given to guide the user to conduct the analysis, and sample forms are provided. Appendices and other tools provide a range of resources to improve the staffing analysis process. Additional resource material that supports this document is available from the NIC Information Center ([www.nicic.org](http://www.nicic.org), E-mail: [asknicic@nicic.org](mailto:asknicic@nicic.org).)

The NIC Jails Division is a source of possible assistance with staffing analysis, including referral, training, and technical assistance ([www.nicic.org](http://www.nicic.org), 800 995-6423. (202) 307-3106.)

## **PART I: Introduction and Overview**

### **1. Defining “Staffing Analysis”**

Many individuals and agencies have implemented various forms of a “staffing analysis” since NIC first published the workbook 20 years ago. Some of these efforts have fallen far short of the standard that the authors intended to set with this workbook. In some instances, efforts have addressed only the math associated with relieved posts; in others the focus has been limited to determining where staff posts should be located in the facility. Such approaches often use elements of the NIC workbooks, but do not implement the full spectrum of staffing analysis tasks.

The authors believe that a staffing analysis is:

- *Comprehensive*--examines all facets of jail operations and management.
- *Precise*—counts and calculates a wide range of elements.
- *Creative*—finds ways to improve effectiveness and efficiency.
- *Inclusive*—provides employees and other stakeholders with meaningful opportunities to shape the analysis and review initial findings.
- *Cost Effective*---uses existing resources to improve jail operations and to maximize the value of current staffing resources.

Although the methodology presented in this document is broader than other forms of staffing reviews, it has proven to yield exceptional results.

A comprehensive jail staffing analysis demands a variety of activities and techniques that include:

- Math (calculating employee time away from posts, determining the number of FTEs needed for each classification of employee, etc.)
- Science (researching task frequency, measuring task completion times, experimenting with changes in operational practices, surveying employees and other stakeholders, evaluating schedules and coverage plans, etc.)
- Art (creating coverage plans, finding better ways to implement tasks, exploring alternatives to improve efficiency and effectiveness, etc.)

The authors encourage readers to use elements of this workbook to address specific problems or needs. Hopefully, partial efforts will not be called a comprehensive staffing analyses.

### **2. Jail Staffing Issues**

Staffing a jail poses many challenges and potentially serious problems for administrators, staff, and policy-makers, including the following:

- Unexpected overtime costs.
- Excessive amounts of compensatory time earned by staff.
- Overworked staff who burn out.

- High rates of staff turnover.
- Frequent understaffing, which results in essential posts and positions not being filled.
- Inability to supervise inmates properly or provide needed programs and services.
- Increased incidents of assault and contraband from a changing inmate population.
- Inability to provide required breaks for staff.
- Frequent demands for service outside of the jail that draw staff from their jail duties (such as court transport, taking inmates to medical appointments, and other “details.”)
- Lack of proper staff backup to handle emergencies.
- Inmates who abuse the facility, furnishings and equipment, shortening the useful life of the physical plant and creating growing needs for maintenance and repair.
- Over-reliance on part-time and reserve staff.
- Inability to supervise staff properly.
- Inability to provide adequate staff training because employees cannot be taken from their post.
- Inconsistent scheduling and deployment of staff that sometimes deploys staff when they are not needed, using employees hours that will be needed later.
- Too few authorized full-time positions to provide enough actual staff hours to cover jail needs.

A comprehensive staffing analysis can help solve these and other staffing problems that jails face.

### 3. Symptoms Versus Causes: The Overtime Example

The most common jail staffing issue centers on the amount of overtime logged by jail staff. An examination of some of the underlying causes of excessive or unexpected overtime reveals the need for a comprehensive staffing analysis. Appendix F provides a case study that uses the staffing analysis methodology to diagnose and solve overtime problems.

Overtime and compensatory time (also called “comp time”) accrue when regular full-time employees work additional hours, beyond their usual 40 to 43 hour work week. Under Federal labor laws (CFR 553.22), employers must compensate overtime hours at least one and one-half times the base pay rate through pay or with compensatory time off (comp time) that is earned at the same rate.

A certain amount of staff overtime is inevitable in jails, and is actually an efficient response to certain needs. Sometimes employees are asked to work beyond their usual hours to respond to unexpected staff shortages due to unscheduled absence, emergencies, or intermittent “details” that require additional staffing for a short period of time (supervising hospitalized inmates is one of the most common details). Some jurisdictions prefer incurring higher rates of overtime to hiring more full-time staff or operating below minimum staffing levels. Overtime use also provides them with a better trained and more experienced workforce than does the alternative of using part-time staff.

Most overtime that will be required under a given staffing structure can be predicted by anticipating problems, analyzing past practices, and making informed calculations. Once

overtime levels are predicted, proactive steps can be taken to reduce them. This staffing analysis workbook will help jail officials, administrators, staff, elected officials, and others to—

- Predict future staffing needs.
- Diagnose the causes of staffing problems.
- Design better staffing practices to address future staffing problems.

When viewed as a symptom of a staffing problem, the underlying causes of overtime can be diagnosed. Excessive overtime is often caused by one or more of the following conditions:

- Insufficient full-time staff positions authorized in the budget to cover basic posts and positions (minimum staffing levels).
- Inability to hire enough staff to fill all authorized staff positions, which may be related to difficulties in recruiting enough qualified applicants, filling positions in a timely manner, or retaining staff.
- Inaccurate staff coverage plan for the jail (an inefficient shift schedule), which produces unexpected demands for additional staff to address basic problems and needs.
- Failure to anticipate situations that make full-time staff unavailable to work their regular hours (i.e. long-term disabilities, training time, and scheduled and unscheduled time off).
- Failure to accurately calculate the actual number of hours that a full-time staff member is available to work during a year (net annual work hours).
- Inmate crowding (above rated capacity); higher custody classification of inmates than originally planned; and increased bookings, releases, and transports—all of which increase staffing levels unexpectedly.
- Staff-intensive programs.

#### 4. When To Use This Workbook

This workbook helps officials and staff gain a better understanding of staffing issues and develop a comprehensive staffing plan that will anticipate problems and address the unique needs of each jail. Staffing practices respond to the total jail setting and must be evaluated and revised when any major component of that setting changes. Users will find the workbook helpful in their efforts to—

- Create an initial staffing plan for a new facility.
- Conduct a comprehensive staffing analysis of an existing facility for the first time.
- Review and evaluate an existing staffing plan.
- Examine practices when new leaders assume control (sheriff, commissioners, etc.)
- Revise an existing plan in response to physical plant, operational philosophy or policy changes.

A staffing analysis should be conducted under the following circumstances:

- When a new facility or major renovations are being planned and designed. Analysis should occur at several key points during the planning and design process (prearchitectural programming, schematic design, design development, construction documents) and during the transition phase.
- When substantial changes occur in the facility, inmate population (such as crowding or the types of inmates housed), operating philosophy, policies, or management approaches.
- When no staffing analysis of the jail has been done before.
- When preparing for the annual budget cycle, to identify significant changes in the jail setting.

A comprehensive staffing analysis will identify ways to improve jail efficiency and staff effectiveness. It provides interested stakeholders with the opportunity to understand the connections between jail operations and budget needs.

#### 5. Benefits Derived From Conducting a Staffing Analysis

Staffing a jail is an expensive proposition. In many jails, staff costs make up 75 percent to 85 percent of the annual budget, and such a costly resource must be carefully managed. Creative practices and strategies that can increase efficiency and effectiveness, often without adding staff, are identified at the end of each step.

A staffing analysis will reveal if jail staffing is deficient in any of several ways:

- Too few employees are provided.
- The wrong type of employee is hired or retained.
- Employees are assigned to the wrong duties.
- Employees are not properly trained.
- Employees are not scheduled properly or efficiently.

A well-conceived and properly implemented staffing plan will solve these problems. Good staffing plans and practices are important for achieving the jail's most important mandate: providing safety for staff, inmates, and the public. Good staffing improves the jail's ability to provide programs and services, decreases potential liability, and ensures that costly staff resources are used in the most efficient manner.

#### 6. Who Should Be Involved?

No single official or staff member can improve staffing practices. Long-term success requires that several stakeholders be involved, each with meaningful opportunities to shape the staffing plan. Participation may be secured by forming a team to conduct the staffing analysis or by assigning the principal staffing analysis duties to a single person who circulates findings to a larger group for review and comment. While the latter method may prove easier, it is not successful unless the larger group offers comments and ideas that are considered carefully.

Many people have a stake in jail staffing practices. Consider involving the following stakeholders in the analysis:

- The sheriff, correctional director, or other official responsible for the jail.
- Jail administrators and managers.
- First line supervisors.
- Line officers.
- Program staff.
- Contract service providers, such as health service or food service.
- Policymakers, such as commissioners, council members, and county and city managers.
- Budget analysts and personnel managers.
- Risk managers.
- Representatives of labor organizations, such as unions and bargaining units.
- Jail inspection officials.
- Jail civilian staff.
- Jail service providers.
- Community service providers (human services, substance abuse treatment, etc.)

In addition to the preceding persons who have a direct interest in the way the jail operates, some jurisdictions have also involved additional stakeholders such as workforce/employment agencies, the business community (who employ inmates after release), inmate advocates and families (who are concerned about inmate safety and welfare), the religious community, educators and training providers. In some jails, local law enforcement agencies provide backup for jail staff and have an interest in jail staffing.

Other agencies who operate 24/7 entities (911, fire, police, etc.) sometimes participate to share their experience and often to learn the methodology so that they may take it back to their agencies. Finally, some jurisdictions may find it helpful to invite various representatives of the community to participate as a way to educate them about jail conditions and operations and the complexity of staffing.

One jail manager wondered why some of these stakeholders are on the list. Religious entities, for example, are affected by staffing practices when they encounter difficulty visiting inmates in jail, or conducting services at the facility. Also, faith-based initiatives in many communities work with inmates before and after their release from confinement. There are many connections between the various stakeholders and the jail that must be identified and respected.

Many sheriffs and jail managers have found that it is not a question of “if” these stakeholders will weigh in on jail operations, but rather a matter of “when” and how they will voice their positions. To that end, involving stakeholders in the staffing analysis process provides an opportunity to:

- Educate them on the complexities of the jail.
- Listen to their concerns and ideas when you are able to incorporate them into the decisions and proposals that are being created.
- Ask for their support when it is needed to secure needed resources.

One jail manager grumbled about involving the union with the staffing analysis process, but admitted it was better to “give them their pound of flesh an ounce at a time” during the process, rather than creating a standoff at the end. A union official had a more upbeat reaction, voicing appreciation for the opportunity to be involved with the creative process rather than being confronted with a “take it or leave it” decision at the end.

Stakeholders need to be provided with meaningful opportunities to shape the staffing plan. Participation may be secured by forming a team to conduct the staffing analysis, by assigning the principal staffing analysis duties to a single person who circulates findings to a larger group for review and comment, or through other approaches. Whatever methods are used, you will not be successful unless the entire stakeholder group:

- Has *meaningful* opportunities to offer their comments; and
- Their ideas are carefully considered.

There are many ways to ensure meaningful involvement in an efficient manner. Participation in any form provides a way to tap the resources and ideas of relevant parties and increase their commitment to the process. It also increases the likelihood of their support for the end product. For example, if they are involved in the process and help shape its outcomes, staff may be more supportive if schedules need to be changed, and budget officials may be more easily convinced of the need for additional funds.

## 7. Jail Characteristics and Staffing Considerations

Both the unique operational characteristics of jails and the associated staffing requirements pose challenges. An understanding of these challenges provides an important foundation for undertaking the staffing analysis process. While many of the participants in the process already appreciate these characteristics, many do not. Starting the process with a common frame of reference makes it more productive from the outset.

### **Characteristics of the jail setting**

Jail operations have many unique characteristics:

- Jails operate continuously, 24 hours per day, 365 days per year.
- Jails provide a wide spectrum of services, activities, and programs for inmates.
- Jails are high-risk settings, where inmates are often dangerous to themselves and others.
- Jail populations can fluctuate widely throughout the year, and even on a day-to-day basis.
- Many jail inmates spend only a few days in confinement. In some jails, up to 90 percent of all inmates are released within 72 hours of admission.
- Admission and release procedures require much staff effort, but the peak periods of admission are often difficult to anticipate.
- Extensive documentation is required for all activities and procedures at the jail.
- Perimeter security and internal circulation must be controlled at all times.
- Supervision needs vary for different classifications of inmates.
- Jails house both pretrial detainees and sentenced inmates, and each group brings its

- own operating imperatives and constitutional guarantees.
- Staff turnover is high in many jails.
- Jail staff, administrators, and funding officials can be held liable for jail operations and conditions.

### **Jail staffing considerations**

Several unique operational characteristics of the jail setting must be considered:

- Backup must be provided for staff in all areas of the jail. When a staff member has to respond to problems, critical incidents, or contingencies, other staff must be readily available to provide support.
- Continuing inmate supervision should be provided in all jails. Supervision extends beyond just observing inmates at regular intervals. Effective supervision demands contact between jail staff and inmates; jail staff must be able to “interact” and “act.”
- A constant minimum level of staffing is required to ensure prompt and safe evacuation of the facility during an emergency and to provide continuing inmate supervision. Minimum staffing levels are different for each jail and may change during the year.
- Electronic surveillance (audio monitors, closed-circuit television, movement detectors, sensors) has its place— not as a substitute for staff, but as a supplement.
- Relief must be provided for most staff posts and positions to allow employee meals and breaks.
- Staff must be properly trained for the duties to which they are assigned.
- Staff must be supervised. Supervisors should not be assigned to a specific post because they must be able to move throughout the facility to supervise operations and respond to problems.

This workbook does not recommend staff-to-inmate ratios, because time and experience have proven that no ratios are applicable to every jail, even jails of the same size. Appendix B explores this issue in greater detail, outlining why one jail’s staffing level cannot be easily compared with another’s and why the use of staff-to-inmate ratios is inappropriate.

Jail staffing levels are based on several internal and external factors. Internal factors include physical plant design (sightlines, number of control posts, perimeter security, number and size of housing units, and controlling circulation or movement—the need to escort inmates); operational philosophy (types of inmate supervision and level of programs and services); classification levels of the inmates; and level of crowding in the facility. External factors influencing jail staffing levels include court decisions and standards of practice.

Court decisions have defined important parameters for jail operations by establishing minimum levels of service, performance objectives, prohibited practices, and specific required operational actions. Past court decisions, most handed down by Federal courts, have required jails to—

- Protect inmates from themselves and from other inmates.
- Maintain communication with inmates and regularly visit occupied areas.
- Respond to inmate calls for assistance.
- Classify and separate inmates.

- Ensure the safety of staff and inmates at all times.
- Make special provisions for processing and supervising female inmates.
- Ensure that all required inmate activities, services, and programs are delivered (medical, exercise, visits, etc.).
- Provide properly trained staff.

Standards promulgated at the local, State, and national levels also provide parameters for jail operations. Local health, safety, and building standards are often applied to jails. Many States have established mandatory jail standards and inspect jails to measure compliance. The American Correctional Association (ACA) establishes national professional standards for jails and offers an accreditation process based on those standards. ACA created “core jail standards” in 2009 that identify minimum requirements for a safe and constitutional jail.

## 8. The Staffing Analysis Process

This section describes a step-by-step process for conducting a comprehensive staffing analysis of an existing jail or a new jail. The nine steps are sequential and break the staffing analysis process into manageable tasks. Each step builds on the preceding steps. The process should always be interactive and creative.

Staffing analysis is not an exact science. No simple formulas or ratios may be consistently applied to all jails. Although some practitioners still advocate simpler approaches to staffing, these are not as responsive to the unique character of each jail-- and to the changes experienced in jails-- as the methodology described here.

Although it will take some time to gather the in-depth information necessary to complete a thorough analysis, this process has been used with great success in jails throughout the United States. It will take some time to complete the first staffing analysis for a jail, but subsequent updates and revisions will be easier.

One of the differences between the approach presented in this workbook and staffing analysis methods that preceded it is that this process quantifies staffing on an hourly basis, rather than on a shift basis. This approach gives all stakeholders more flexibility and encourages creative approaches that may lead to more efficient and effective practices.

Many jails now operate with a variety of shift schedules; a jail may have 8-hour, 10-hour, or 12-hour shifts; overlapping shifts; and “power” shifts. Because of this diversity, the amount of time that each staff person works in a year (or is “off” in a year) should be analyzed in hours. A day off with pay no longer necessarily means 8 hours off; it could be 10 or 12 hours, and jail administrators must fill that number of hours with other staff. Similarly, the amount of coverage needed for a specific post and for total jail coverage should be analyzed and expressed in hours.

All the forms used in this workbook are based on hours. Some of the supplementary tools break operations, coverage and schedules into 15- or 30-minute units. One may enter the none step process at several points.

- Those who are conducting the first full analysis of a facility or who are evaluating

new facility plans should begin with Step 1. Completing the jail profile is an important first step for these users.

- Those who are reevaluating or updating an existing staffing plan may start with Step 2, evaluating and updating the figures based on changes that occurred since the last staffing plan was done.

For each step in the process, this workbook provides:

- A narrative describing the methodology and process for completing the step.
- Instructions for completing each form or computer-based tools.
- A completed sample of each form or product (Blank copies of the forms are provided in Appendix I.)
- “Creative solutions” to consider during each step.
- Resources that may be useful

Significant changes in the process are presented in this Third Edition. They include:

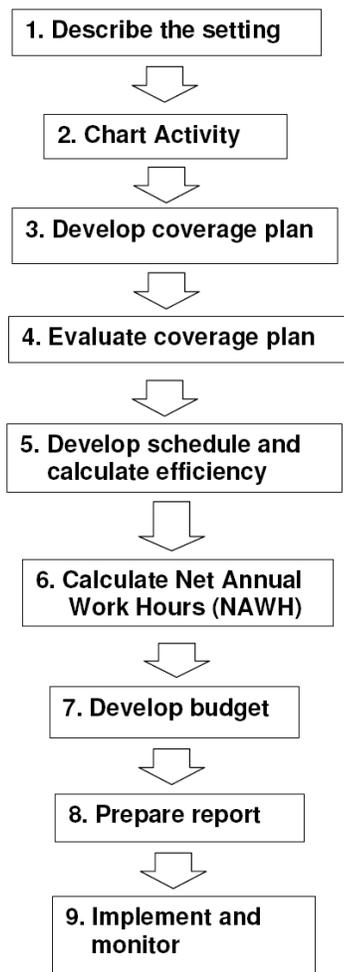
- Adding a new element for at the end of each step that encourages improvements in current operations and practices before moving on to the next step.
- Moving the calculation of Net Annual Work Hours (NAWH) later in the process where the products of the calculations are actually applied.
- Moving the evaluation step forward in the process to Step 4.
- Expanding the information provided in the scheduling step (now Step 5), and adding a new tool to calculate the efficiency of schedules.

The nine steps of the new staffing analysis are:

1. Describe the setting
2. Chart activities
3. Develop a coverage plan
4. Evaluate the coverage plan
5. Develop schedules and calculate efficiency
6. Calculate Net Annual Work Hours (NAWH)
7. Prepare a budget
8. Write the report
9. Implement and monitor

The steps are generally consecutive as shown in Figure I-1.

**Figure I-1: Staffing Analysis Flowchart**



Using the NIC staffing analysis process provides the opportunity to literally connect all of the staffing decisions and practices with the budget—in effect to show where each dollar of the budget is spent in the jail.

The second part of this document book explores each step of the staffing analysis in detail, providing explanations and identifying resources. The project manager’s guide presented in Appendix A distills this information into a series of action steps and checklists for the person who is responsible for implementing the process.

This document is supplemented by a comprehensive set of tools and resources ([www.nicic.org](http://www.nicic.org)) that will make it easier to implement a staffing analysis, including forms, computer programs, case studies, samples, finished reports and additional explanation of the steps. This “toolkit” expands frequently as new practitioners contribute their experience and products.

## **PART II: Step By Step Instructions**

The following pages describe each step in detail. Appendix A provides a project manager's guide that offers additional tips and resources. The guide identified several imperatives that should be considered throughout the process:

1. Nothing is too small.
2. Everything goes somewhere.
3. Leaving something out will hurt *you*.
4. Keep asking why, why, why?
5. Think outside of...everything.

These imperatives encourage participants in the process to pay close attention to details and to challenge every aspect of the jail setting.

### **Step 1. Describing the Setting**

One thing we can count on in jails is that things will change. Managers and officials deal with change on a daily basis, usually involving things over which they have little or no control (crime, arrests, bail and release, sentencing, and more). This first step in the methodology involves creating a "profile" of the jail.

It is tempting to skip this step-- after all, *we* already know about the jail context because we work with it every day. But remember that most stakeholders in the staffing analysis process do not have the same understanding of the jail setting and its operation. It is up to you to paint an accurate picture. Without a full comprehension of the jail context, these stakeholders will not be able to participate fully in the staffing analysis process, or the recommendations that will be developed through the process.

Further, because jail operators experience the change in daily increments, we are less likely to appreciate the overall impact on the jail. Jail managers and officials are often too close to daily operations to appreciate the magnitude of changes that have accrued over time. We adjust our operations in smaller increments, gradually changing direction in response to the challenges that are presented.

Jail managers are invariably surprised when they step back and look back at the magnitude of change. In a recent training workshop, one jail administrator suggested that he was "not seeing the forest for the trees." Fresh eyes, even those belonging to folks who know little to nothing about corrections, often offer fresh perspective and spawn creativity.

The first step is to collect jail inmate population data, operational philosophy information (mission statement), floor plans of the facility, operational budgets, State and professional standards, and relevant case law. These materials need to be available during later steps in the process, and need to be analyzed to describe the physical, operational, and human context of the jail at the time of the staffing analysis.

A detailed profile of the jail setting is an essential starting point in a comprehensive staffing analysis for either a new facility or an existing facility for which a staffing analysis has never been done. This information is essential to ensure that the basis for the staffing analysis is clear. The products may be needed later to justify requests to funding sources, or even in court. Also, subsequent staffing analyses should review and update this material.

The profile should examine and record key features and characteristics of the jail setting, including—

- Facility rated capacity.
- Average daily population for the past several years broken into various groupings.
- Number of admissions and releases, time and day of week for admissions and releases.
- Length of stay-- not just average, but analyzed in more detail.
- Inmate characteristics (e.g. age, race, sex, residence, charge, status—pretrial, pre-sentenced, sentenced, hold, and more).
- Type of charges (e.g. traffic, misdemeanor, felony; violent, nonviolent).
- Number and types of classifications and housing separations.
- Mission statement.
- Facility design (floor plan).
- Location and condition of equipment such as closed-circuit television, detection systems, etc.
- Organizational chart, span of control, management philosophy.
- Current staffing plan, schedule, shift rosters.
- Current staff work-hour information.
- Number and types of critical incidents.
- Personnel policies
- Union or employee contracts.
- State and professional standards.
- Applicable court decisions and consent agreements.
- Latest inspection reports.
- Service contracts in effect.
- Problems experienced with facility operations in recent years.
- Issues to be addressed by a staffing analysis.

Collecting, analyzing, and logically arranging this information for presentation will create a clear picture of the current situation and lay the foundation for the staffing analysis. Consider asking middle management and line-staff to help present this information to the stakeholders. Their perspective (and buy-in) is priceless, and they may surprise you.

Be sure to document all information you have gathered. Keep this material for future reference, and as a snapshot of the situation at the time of this staffing analysis. This body of information, which you probably have not collected in this form before, may also prove useful for other activities, such as managing jail crowding.

### **Making *Better* Use of Inmate Data**

Many jurisdictions have used this step in the staffing analysis process to expand their analysis of inmate data. “Length of stay” (LOS) is a good example of a data element that is often poorly analyzed. Jail managers know that “average” length of stay (ALOS) is anything but average. When we attempt to describe our inmate population in broad terms like ALOS we mislead the stakeholders and the public who need to have a better understanding of jail dynamics.

Table II-1 describes a typical jail population in terms of length of stay. It also compares inmate admissions to the detention days accrued. In this example, nearly 65% of the inmates admitted to the jail spent 1 day or less in confinement, but these inmates accounted for only 1.2% of the detention days (beds used.) The numbers under “admissions” address the volume in inmates who are admitted, not the impact they have on jail beds. The numbers under “detention days” provide a view of the jail that is more like a “snapshot,” describing the mix of inmates you would find on a typical day.

**Table II-1: Length of Stay Data for Typical Jail**

<b>Number of Days in Confinement</b>	<b>Percent of Admissions</b>	<b>Cumulative Percent of Admissions</b>	<b>Percent of Detention Days*</b>	<b>Cumulative Percent of Detention Days</b>
< 1 day	47.0%	47.0%	0.0%	0.0%
1 day	17.5%	64.5%	1.2%	1.2%
2 days	8.9%	73.4%	1.2%	2.4%
3 days	2.7%	76.1%	0.6%	3.0%
4 days	1.8%	77.9%	0.5%	3.5%
5 days	1.3%	79.2%	0.4%	3.9%
6 - 10 days	3.5%	82.7%	1.9%	5.8%
11-30 days	5.3%	88.0%	7.1%	12.9%
31-60 days	4.3%	92.3%	13.2%	26.1%
61-90 days	2.5%	94.8%	13.1%	39.2%
91-120 days	1.8%	96.6%	12.9%	52.1%
121-150 days	1.0%	97.6%	9.5%	61.6%
151-180 days	0.8%	98.4%	8.4%	70.0%
181-365 days	1.4%	99.8%	24.7%	94.7%
366-548 days	0.2%	100.0%	3.9%	98.6%
Over 548 days	0.0%	100.0%	1.4%	100.0%

A “detention day” represents one inmate spending one day in jail. 365 detention days use one jail bed for a year.

The overall *average* length of stay for the inmates described in Table II-1 is 11.6 days. Using this average without the detention day analysis, you might expect to walk into the jail on a typical day and find that the majority of inmates will be spending about eleven days in confinement. But Table II-1 demonstrates how misleading the average can be.

In fact, if you take a snapshot of this jail on a typical day, 94.2 percent of the inmates will spend 11 *or more days* in confinement, and 87.1% of the inmates will spend over 30 days. The high volume of very short-term inmates produces a deceptively low overall average

length of stay calculation. Breaking the population down into smaller cohorts, by length of stay, and examining detention days, provides a more accurate picture of the jail population.

Figure II-1 presents the data from Table II-1 in a graph that compares and contrasts length of stay in terms of admissions and beds used (detention days).

**Figure II-1: Comparing Length of Stay and Detention Days**

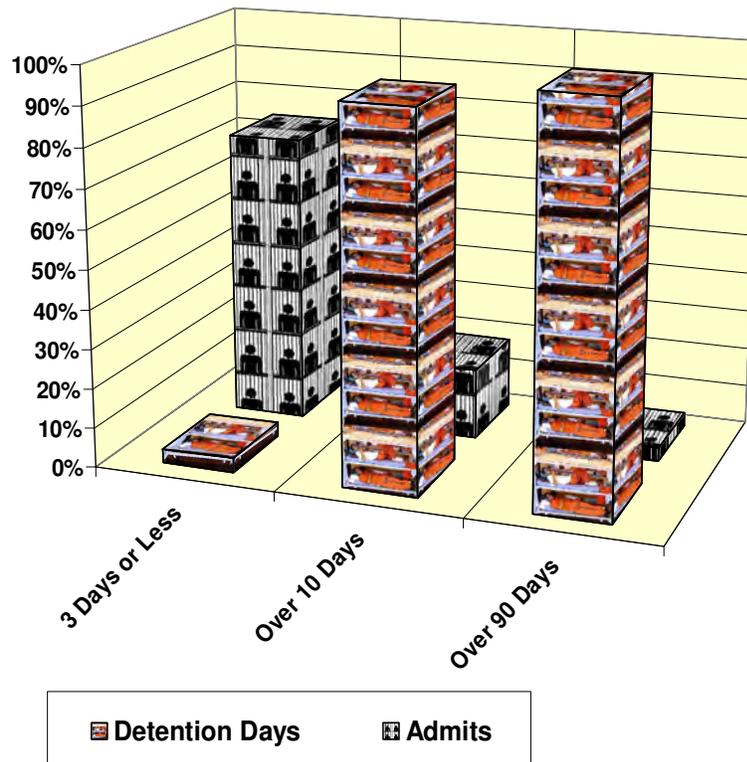


Figure II-1 shows that less than 20% of the inmates will spend over 10 days, but these inmates will occupy over 90% of the beds used in a year.

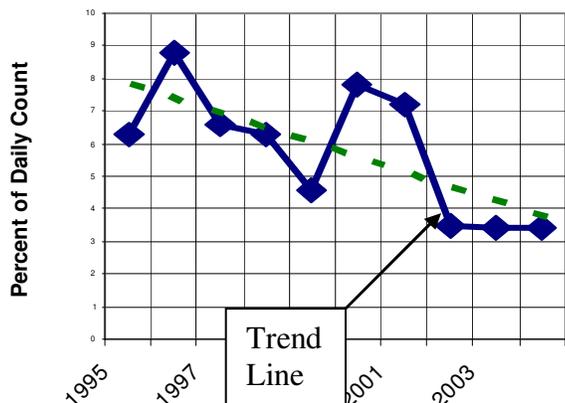
Why is this important? There are several implications for the staffing analysis process:

- Many stakeholders who do not work in the jail misinterpret a low average length of stay, concluding that the jail houses only low level offenders.
- Sufficient staff must be provided to process the high volume of admissions and the corresponding releases.
- Inmate who spend months, not days, in jail often present more challenges in terms of management, service needs and security risks.
- Many jails were not designed to house inmate who spend months and even years in confinement and the lack of space for services, programs and activities creates serious challenges for jail personnel.

Figure II-2 provides another example of the value of examining data during this early stage of the staffing analysis process. In the process of assembling data for the staffing analysis,

one county noted that the proportion of sentenced “county” inmates was dropping significantly in recent years.

**Figure II-2: Percent of Daily Population Convicted of “County” Offenses**

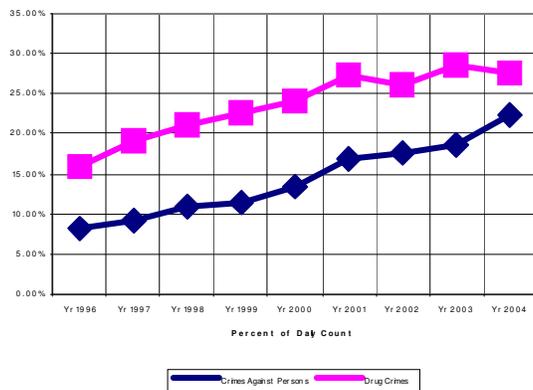


The insights in Figure II-2 have many implications for jail operations and staffing because county-sentenced inmates are the lowest-risk offenders, having been convicted of relatively minor offenses. This type of inmate requires less supervision. They also comprise the majority of the inmate workforce. County officials used this new insight as an example of the steady “hardening” of its inmate population in recent years. As the jail became more crowded, these low-risk inmates were an easy target for diversion to alternatives to confinement, reducing the number in jail and freeing up jail beds for more serious—and challenging--inmates.

Another staffing implication from this data element is that the supply of inmate-workers is dwindling, possibly leaving tasks undone. Nearly 20 percent of all jail inmates work at least 6 hours each day in our jails.<sup>2</sup> In order to maintain the inmate workforce, this jail will have to change the type of inmates who are allowed to work by including pretrial detainees, who will require more supervision when they work.

Figure II-3 provides another view of the trends in the sample jail’s population.

**Figure II-3: Type of Charge**

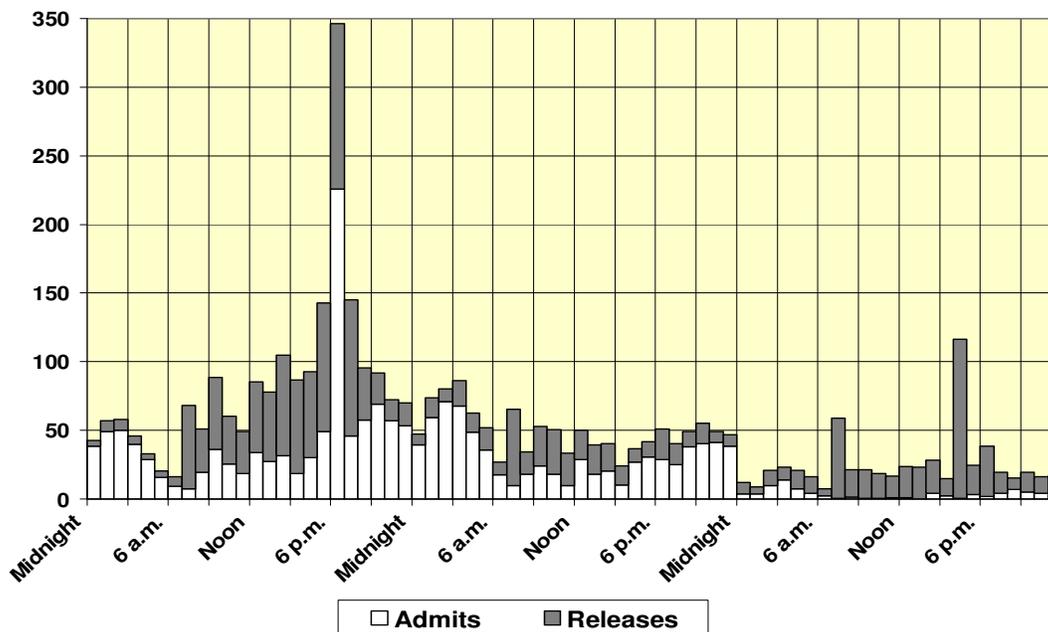


<sup>2</sup> *Work in America’s Jails*. National Institute of Justice, 1996. Washington D.C. [www.jailwork.com](http://www.jailwork.com)

Significant staffing implications may be derived from the information in Figure II-3. The increase in inmates charged with violent offenses creates concerns about a more violent inmate population. The increasing number of inmates charged with drug offenses may increase concerns about contraband, as well as increased demand for medical services.

Another element of the context requires analysis of intake and release patterns. Figure II-4 depicts the number of admissions and releases by hour for Friday, Saturday and Sunday.

**Figure II-4: Admissions and Releases, Friday, Saturday and Sunday**



The graph in Figure II-4 highlights the need for additional staff resources on Friday evenings and Sunday afternoons. The staffing analysis process will challenge participants to examine ways to reduce such high peaks of demand by changing policies and practices. The spike in the number of releases on Sunday at 6 p.m. might be dissipated by changing jail and court policies about release times.

The combination of getting the right people around the table-- or at least involved in some manner-- and gathering accurate and meaningful information to inform them, will pay dividends as you improve staffing practices.

#### Focus on Changes in the Jail Context

In addition to collecting baseline information and data that will be used in subsequent steps, this step also helps stakeholders to identify significant changes in the jail setting that impact facilities, operations and staffing. Hennepin County, Minnesota, highlighted the “Forces and Changes in the Context” in their staffing analysis report.

Step 1 of the process helped them identify the following significant changes:

- Average daily inmate population has increased by 43.4% since 2001
- Opening the new Public Safety Facility [PSF] (July 2001) nearly *tripled* the volume of building area in the jail
- Fifth floor City Hall reopened to house the expanding inmate population (2004)
- Bookings and releases have increased every year
- Inmates pose greater risk and threat
- Inmate health and mental health needs are increasing
- Inmate length of stay is increasing
- City Hall is now fully occupied, creating the need for many “unfunded” posts covered without the addition of employees to the roster
- Current staffing patterns often draw employees from their assigned duty posts for extended periods of time, removing the primary source of backup
- Supervisors are increasingly compelled to work deputy posts to address the shortfall on some shifts, leaving less time to effectively supervise employees
- Criminal justice processes are placing greater demands on staff time (i.e. mental health screening, transport screening, Predatory Offender tracking, ACA Accreditation documentation requirements)
- Technology advances have created bottle necks instead of efficiencies in some areas
- Training requirements have expanded to respond to changes the inmate population (i.e deaf/hard of hearing, mentally ill, increase in non-US citizens)
- Staffing more posts with civilians has created new security challenges

Many participants in the staffing analysis have been surprised by the findings from Step 1. Jail operators see the changes in small increments and adapt to them gradually. When they step back and see the larger picture, the magnitude of change is usually sobering.

After one staffing analysis team finished identifying the changes experienced in the last five years, one of the participants said “This is depressing.” Another participant commented that it makes sense for staffing practices to change in response to the major changes in the jail context.

## Creative Solutions to Consider

### Change the Facility

Too often, we forget that the physical plant can be altered, often more easily than operations. Many jails have used selective renovation—something as simple as putting a window in a wall—to dramatically improve staff performance.

Sometimes it may be as easy as changing the way the current facility is used; closing a housing unit, reassigning an activity to a different space, and similar use changes can also make a big difference.

One jail was having trouble providing consistent supervision for attorney-client contact visits. This activity was moved to the existing non-contact visiting area, which had direct observation from a fixed control center. The attorney and client use the same side of the visiting area, rather than having the glass between them.

Many simple and inexpensive renovations can significantly improve staff efficiency. These changes can address operational issues:

- Observation—adding observation windows, improving sightlines, creating an observation room adjacent to an existing post.
- Separation—increasing the ability to separate inmates in housing and activity areas.
- Movement—providing more secure compartments in the jail, relieving concerns about allowing inmates to move without escort.

Relocating activities, such as fixed control posts, may seem expensive, but these one-time renovations may be more cost-effective than adding staff for the life of the facility. One staffing analysis team found that closing several sub-control stations resulted in more employee presence in housing areas and more effective inmate management. Many jails have recovered the cost of centralizing some control functions within a few months due to improved staff efficiency.

Sometimes it is just a matter of changing fixtures or furnishings. Replacing a solid steel door with one that has a vision panel can make a big difference in observation and sightlines. Improving lighting is another way to improve observation and surveillance. Think of your facility as a work in progress. Be aggressive when analyzing problems and identifying opportunities to adapt the facility to serve your operations better.

#### Resources

- Sample staffing analysis reports
- Appendix A, Project Manager's Guide

## Step 2: Chart Activities

### A: Taking Control of Your Daily Activities

Staffing is a means to an end. Good staffing responds to the ebb and flow of daily activities and to the relative risks that are associated with these activities.

There are some aspects of daily jail operations over which the sheriff and jail manager do not have control, such as when arrestees are brought by local police for initial processing and detention, and when the courts order inmates to be present for proceedings. But sheriffs and their jail administrators do have control over many of the intermittent events that occur each day. However, it is rare to find a daily activity schedule that is actually designed and managed proactively-- the majority are the result of decisions made over time by different officials, in response to requests from others. In other words, we often let the “schedule manage us”, not vice versa.

By stepping back and looking at the current patterns of activities, it is possible to identify how current practices create staffing problems and inefficiencies, and subsequently allowing us to address these without necessarily increasing staff.

The first part of this step involves identifying all the programs, activities, support services, and security functions that take place intermittently in the jail and charting the times they occur over the course of a typical week (7 days). This step does not record continuous activities, such as supervising inmates or booking and releasing inmates, which will be examined in Step 4.

In the First Edition of the NIC workbook the process of charting activities was done manually. Since then, the process has been automated through the use of computer-based programs. The Second Edition converted the chart into an Excel spreadsheet. The Third Edition is supplemented by a self-contained program that records, compares and graphs activities, coverage and schedules.

The types of intermittent activities that should be recorded include, but are not limited to:

- Shift change.
- Formal counts or lockdowns.
- Meal service.
- Visiting (public or attorney).
- Sick call.
- Clinic times.
- Administering medications.
- Court appearances.
- Commissary.
- Outdoor exercise.
- Education classes.
- Counseling sessions.
- Library hours.

- Religious services.
- Laundry exchange.
- Inmate transports
- Inmate work activities.

Figure II-5 shows a photograph of a simple activities and program schedule.

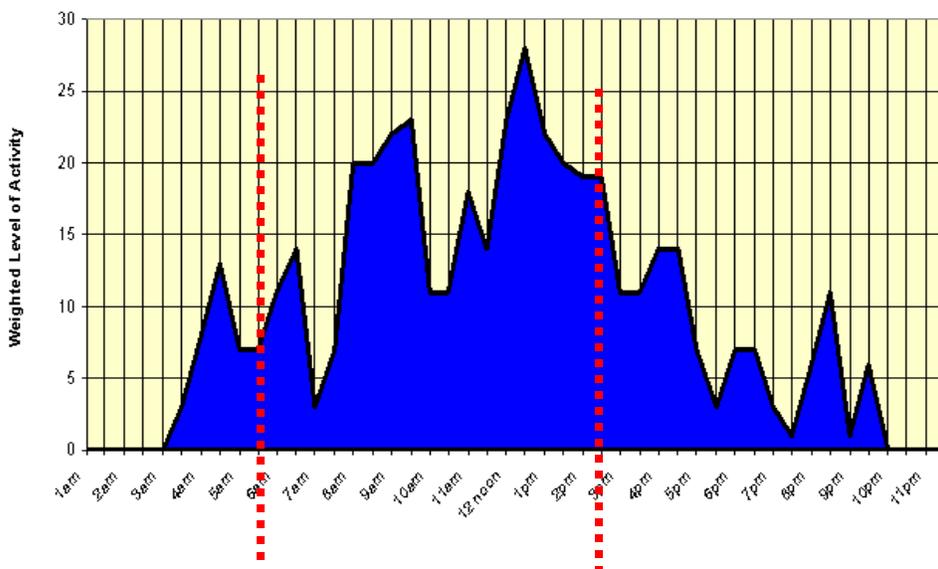
**Figure II-5: Sample Schedule of Activities and Programs**

PROGRAMS SCHEDULE						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:30AM G.E.D.	9:45AM LIFE SKILLS	9:45AM D-V Support	1:00PM LIFE SKILLS SWS	8:00AM LIFE SKILLS	9:30AM P.F B/B/E	
2:00PM	1:00PM LIFE SKILLS SWS	12:00PM D-E D. JIVE	2:00PM D-V	8:30AM G.E.D.	3:30PM SPANISH WORSHIP	
		2:00PM G.E.D.	2:00PM G.E.D.	1:00PM G.E.D.	7:30PM FAITH B/B/E STUDY	
		3:30PM PARENTING	2:00PM CHAPLAIN WORSHIP	2:00PM CHAPLAIN WORSHIP		
		2:00PM LIFE	3-5PM CHAPLAIN WORSHIP	3-5PM CHAPLAIN WORSHIP		
		7:00PM N-A	7:30PM A-			

Since the First Edition was published there have been many enhancements and refinements to the activity charting process. The primary enhancement has been to acknowledge that “not all activities are created equal” by assigning a weight to each one. Figure II-6 shows a graph generated from a weighted activity chart. The red lines indicate the times of shift changes.

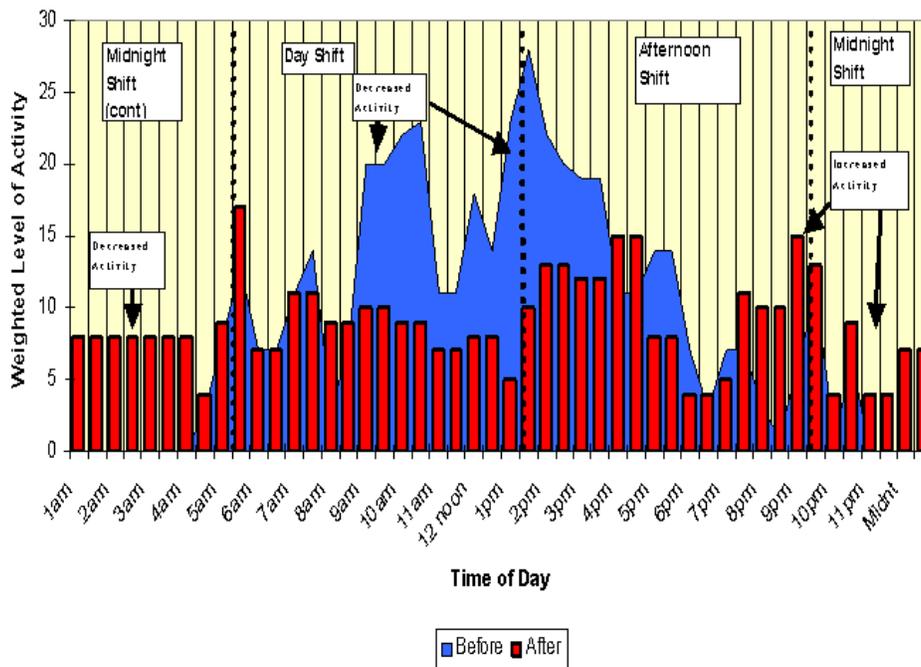
Figure II-6 is fairly typical of jail activity levels. In the sample that was used for Figure II-6, staff worked 8-hour shifts that changed at 5:30 a.m., 1:30 p.m. and 9:30 p.m. As you look at Figure II-6 with that in mind, it becomes clear that current shift schedules “straddle” higher periods of activity. Even at the end of the midnight shift, there is a major upswing in activity, after 6 hours of relative inactivity.

**Figure II-6: Sample Graph of Activity Levels**



How do you assign staff to respond to such varying needs? Why not go back a step and ask “How can we change our daily activities to make staffing more fair and efficient?” Using the activities described in Figure II-6 (a.k.a. “before”), we made several adjustments in the scheduling of activities--but we did not decrease or eliminate activities. The resulting changes in the activity graph (“after”) are dramatic, as shown in Figure II-7.

**Figure II-7: Before and After Activity Graph**



The blue peaks and valleys in the back of Figure II.7 are the activity levels before adjustments were made. In revising the activity schedule, we sought to:

- Reduce the scale of the peak activities.
- Moderate the level of activity on the day shift and move activities to the evening.
- Increase activities in the midnight shift, when staff are usually underutilized (but are needed to ensure response to emergencies, such as fires).
- Distribute work loads between the shifts more fairly and equitably.

To accomplish these, we made the following adjustments to the initial activity schedule:

- Moved the morning court line activities an hour later, still allowing ample time for inmates to arrive at court on schedule, but moving all of the morning court line activities into the day shift.
- Moved the lunch meal hours 30 minutes forward to eliminate the conflict with video court.
- Moved the evening meal 30 minutes to maintain the appropriate time between meals.
- Implemented a policy that attorneys could not visit during meal times.
- Moved morning visiting hours to the evening.
- Moved morning GED, NA and AA programs to the evening, which is more consistent with the real-life schedule inmates will face in the community (work in the day,

education, and programs in the evening), and also makes a broader group of volunteers available in the evening hours.

- Moved mail sorting activities to the midnight shift.
- Moved commissary order fulfillment to the midnight shift.
- Moved commissary distribution to the morning.
- Moved cleaning, records maintenance, court line scheduling, and rosters to midnights (when the skeleton crew staffing level is determined by the need to respond to emergencies, such as fires, but when there are often not enough activities to keep this level of staff busy).
- Adjusted the exercise schedule to reduce conflicts with meals.

The preceding changes made a big difference in the complexity of the daily activity schedule. But other strategies might have been tried as well, such as concentrating activities on one shift (day and evening) that would have higher staffing levels.

And remember that shifts are only a *starting point* for your coverage and scheduling activities. Staggering the start- and end-hours of certain posts and positions might prove more efficient for some activities. Longer shifts often prove efficient and effective. A supervisor on a 9-hour shift will be able to overlap with the outgoing and incoming shift in a very cost-efficient manner. The possibilities are nearly endless, and will be explored further in subsequent steps of the staffing analysis process.

Seizing full control of the daily activity schedule is an important step toward making staffing practices more fair, efficient, and effective. Staffing is a means to an end, and by being proactive and creative with our management of jail operations, we pave the way for the best staffing practices. Remember, control the daily schedule, don't let the schedule control you!

## Creative Solutions to Consider

### Change the Facility

The creative approaches described as “change the facility” at the end of Step 1 are also applicable to this step of the staffing analysis process. For example, adding one or more controlled gates to a central circulation corridor might make it possible to let more inmates move internally without staff escort.

### Change Daily Operations and Programs

Staffing practices *should* respond to many characteristics of the jail setting. While some aspects of the jail are difficult to control, others can be altered by jail managers. Many aspects of the daily operation of the jail are subject to change. When staffing is chronically short on certain days or times of days, it may be time to rethink the overall schedule of activities and programs for the jail. Some changes may involve fundamental policies and philosophies that are the foundation for jail operation; these should be considered with extra caution and should involve input from policymakers and stakeholders.

Step 2 focuses, in part, on intermittent activities, setting the stage for improving the efficiency of current practices. Several examples were provided in the Step 2 narrative.

*Rescheduling* activities often presents the simplest solution. Many inmate activities, such as visitation and exercise, may be scheduled differently without compromising the operations of the jail. Some jails have worked with local judges and court personnel to develop new practices that ease demands on the jail by coordinating the movement of inmates between the courts and the jail. When cooperation from judges is lacking, collecting and analyzing data about inmate interactions with the courts provides another avenue to open discussions.

*Relocating* activities may result in more efficient staffing. For example, moving an inmate program (such as Alcoholics Anonymous) from a special room where a staff member is required to supervise the meeting to a housing unit's dayroom may allow the existing housing unit officer to supervise the meeting. Some jails have even moved inmate work activities into dayrooms.

*Consolidating* activities may be an efficient option. A multipurpose space might accommodate a variety of activities—from reading to recreation—under the supervision of a single staff member. Centralizing some activities may reduce redundancy and replication.

*Reevaluating current practices* often reveals opportunities for changes in inmate movement and supervision to yield efficient results. Consider whether current inmate escort practices are excessive-- can some inmates move from certain locations to others without an escorting officer?

Other practices should also be evaluated and adjusted, such as:

- Food service delivery--can sack lunches be provided instead of using carts and serving trays, should meal delivery be staged more efficiently?
- Separation practices--can some currently separated inmate groups participate in exercise or other programs together?
- Medical services—may some services be delivered to inmates in their housing units, reducing inmate movement?

*Rescheduling* such staff-intensive activities as external transports can reduce staff demands. You can also reschedule such activities as facility cleaning and maintenance to times with less activity and more available staff supervision. Many jails implement their major facility-cleaning activities on midnight shifts, when employees are often underutilized. Inmates involved with off-hours cleaning details are often housed together to facilitate their sleeping schedule. Even adjusting the inmate meal schedule can increase staff efficiency.

*Delegate* some tasks to other staff, or even to inmates. Can inmates be responsible for scheduling their own internal appointments, rather than taking the time of an overworked staff member? Can a civilian staff member in the jail office prepare a schedule, instead of a housing unit officer? Can the control room officer on the midnight shift enter information and data, instead of an overworked intake officer?

*Reduce demand* for some services and activities through policy changes. Many jails have found that requiring inmates to pay a small fee for medical services results in significantly fewer sick call appointments without reducing the quality of care provided to inmates.<sup>3</sup>

*Anticipate* peak periods of need by analyzing past practices. Similarly, identifying periods of low

---

<sup>3</sup> Standards and caselaw confirm that inmates may not be denied medical treatment due to lack of funds.

demand can be productive. If you know from experience that inmate admissions will be higher at certain times, staffing can be adjusted to meet the demand. On the other hand, if there are periods of consistently low demand, you may be able to reduce staffing. On a larger scale, you may even be able to open and close entire housing units or areas of the facility based on fluctuating demands.

*Streamlining* procedures may relieve pressure on staff at key times. For example, if booking staff consistently have difficulty processing new inmates without a backlog, examine every element of the intake procedure and identify steps that may be altered, eliminated, delayed, or reassigned. Look at other activities that chronically present logjams in the operation and evaluate the procedures that contribute to the time required to implement each task.

Some jails operate specialized programs, such as outside work crews or boot camps. These are often staff intensive and may need to be reconsidered when staffing resources become overtaxed. On the other hand, some jails have secured funding for work crews from the agency benefiting from the inmates' work.

Appendix G provides information about improving jail staffing efficiency by managing inmate behavior. This approach is closely linked with improved inmate classification practices. A large jail recently explored this strategy and discovered new opportunities to allocate employee efforts more effectively, spending less time with inmates who are complying with rules and who are engaged with programs and activities. This left more time to provide better supervision to the other, less cooperative inmates.

Finally, you may even want to look at the jail's operational philosophy. Some changes in philosophy may lead to operational changes that improve staff efficiency. When examining this foundation of the jail, remember that many parties have a stake in the jail's philosophy and changing it should involve their participation.

#### Resources:

- Excel "autopost" program
- Freestanding computer program that charts activities
- Samples from other jurisdictions

### **Step 3: Develop a Coverage Plan**

The third step in the staffing analysis process focuses-- in great detail-- on the needs for staff at each hour of the day. Most readers will come into this step with an existing staff deployment plan, whether in effect in a current facility or outlined during the design process of a new facility that is under development.

This step yields the most value if you *ignore* current staffing patterns and schedules. Start with a blank piece of paper (or in this case, floor plan) and approach facility operations with a fresh perspective.

At the end of this step you will have a detailed “coverage plan” that describes:

- What types of employees are needed.
- Where they are needed.
- When they are needed.

The coverage plan has three distinct elements:

- a. Relieved posts and positions.
- b. Non-relieved posts and positions.
- c. Additional “details” that will require employee time throughout the year.

The third element (details) is new to this edition of the workbook. Although it was mentioned in earlier editions, the authors found that few jails effectively document and analyze such details, and as a result their budget request is often underestimated.

### **Think Outside the Schedule**

It is important to “think outside the schedule” as you develop a coverage plan. Look at each need and its duration in terms of the actual time frames, not the arbitrary times defined by 8- or 12-hour schedules.

For example, one county identified the need for an additional officer on Thursday nights for two hours to help with the weekly admission of federal prisoners. The staffing analysis team initially balked about even recording that need on the coverage plan because it was too short. But once they were persuaded to put it down, they later found creative and efficient ways to meet the need, in large part by stringing together other small amounts of coverage to create a post.

The authors have seen many staffing analysis teams tend to ignore small, seemingly ad hoc coverage needs. What we have learned in the 20 years since the NIC process was introduced is:

- Nothing is too small to consider
- Everything goes *somewhere*



entered, and the type of employee (classification) is recorded. Each day of the week the post operates is identified. Table II-3 shows an excerpt from a completed coverage form.

**Table II-3: Excerpt of Sample Coverage Form**

Code Number	Post or Description	Start Time (0000-2400)	End Time (0000-2400)	Employee Classif.	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
IN-01	Booking Officer 1	0000	2400	CO1	x	x	x	X	X	x	x
IN-02	Booking Officer 2	0000	2400	CO2	x	x	x	X	X	x	x
IN-03	Booking Officer 3	0000	0630	CO1					X	x	
MC-01	Master Control 1	0000	0630	CO1	x	x	x	X	X	x	x
MC-02	Master Control 2	0800	1600	CO1	x	x	x	X	x		
A-1	Hsg Pod A Officer 1	0000	2400	CO1	x	x	x	X	X	x	X
B-1	Hsg Pod B Officer 1	0600	2300	CO1	X	X	X	X	X	X	x
C-1	Hsg Pod C Officer 1	0000	2400	CO1	x	x	x	X	X	x	X
D-1	Hsg Pod D Officer 1	0600	2300	CO1	X	X	X	X	X	X	x
MAX-1	Max Sec Unit 1	0000	2400	CO1	x	x	x	X	X	x	X
MAX-2	Max Sec Unit 2	0000	2400	CO1	x	x	x	X	X	x	X
SS-1	Shift Super. 1	0000	2400	SGT	x	x	x	X	X	x	X

The sample in Table II-3 depicts several variations that are worth noting:

- 2 officers (a CO1 and a CO2) are provided in intake 24/7.
- A third CO1 is provided in booking on Friday and Saturdays from midnight until 0600.
- One officer is provided in master control 24/7.
- A second master control officer is provided for peak periods of operation (0800 - 1600) on weekdays.
- Housing pods A through D are direct supervision units, with an officer in each pod during all hours that inmates are out of their cells.
- When inmates are locked down (2300 to 0600) one officer provides cell checks for two pods.
- According to policy, the maximum security unit requires two officers 24/7.

The coverage plan form uses one line for one employee. Sometimes several lines are required to show the various coverage times and days of the week.

The Coverage Autopost program analyzes the data that is entered and creates a seven day coverage chart, as shown in Table II-4.

**Table II-4: Excerpt of Coverage Chart**

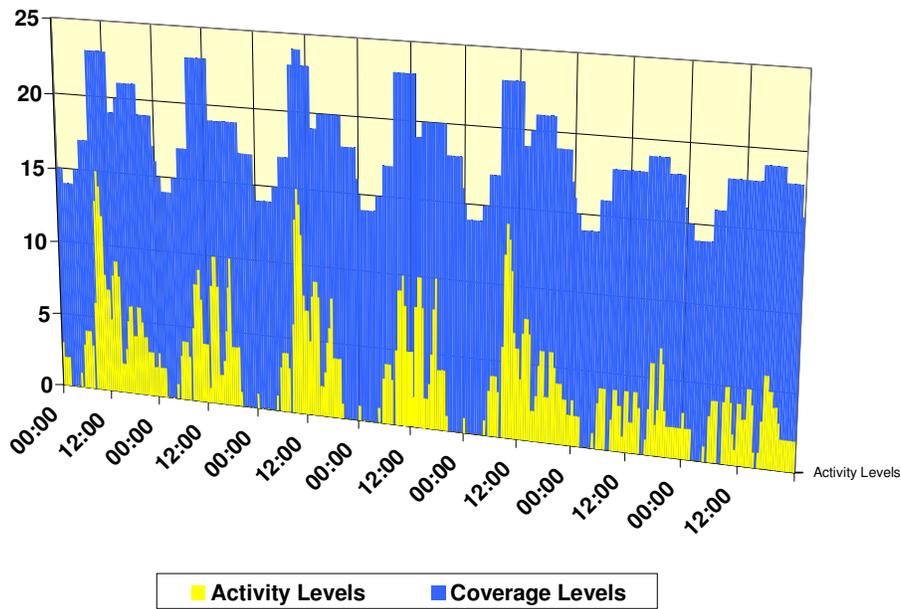
Time of Day	IN-01	IN-02	IN-03	MC-01	MC-02	A-1	B-1	C-1	D-1	MAX-1	MAX-2	SS-1	Total
Monday													
00:00	1	1		1		1		1		1	1	1	8
00:30	1	1		1		1		1		1	1	1	8
01:00	1	1		1		1		1		1	1	1	8
01:30	1	1		1		1		1		1	1	1	8
02:00	1	1		1		1		1		1	1	1	8
02:30	1	1		1		1		1		1	1	1	8
03:00	1	1		1		1		1		1	1	1	8
03:30	1	1		1		1		1		1	1	1	8
04:00	1	1		1		1		1		1	1	1	8
04:30	1	1		1		1		1		1	1	1	8
05:00	1	1		1		1		1		1	1	1	8
05:30	1	1		1		1		1		1	1	1	8
06:00	1	1		1		1	1	1	1	1	1	1	10
06:30	1	1		1		1	1	1	1	1	1	1	10
07:00	1	1		1		1	1	1	1	1	1	1	10
07:30	1	1		1		1	1	1	1	1	1	1	10
08:00	1	1		1	1	1	1	1	1	1	1	1	11
08:30	1	1		1	1	1	1	1	1	1	1	1	11
09:00	1	1		1	1	1	1	1	1	1	1	1	11
09:30	1	1		1	1	1	1	1	1	1	1	1	11
10:00	1	1		1	1	1	1	1	1	1	1	1	11
10:30	1	1		1	1	1	1	1	1	1	1	1	11
11:00	1	1		1	1	1	1	1	1	1	1	1	11
11:30	1	1		1	1	1	1	1	1	1	1	1	11
12:00	1	1		1	1	1	1	1	1	1	1	1	11

The coverage chart graphically depicts the hours and days that each post is staffed during the week. The total number of employees at each half hour is shown in the far right column.

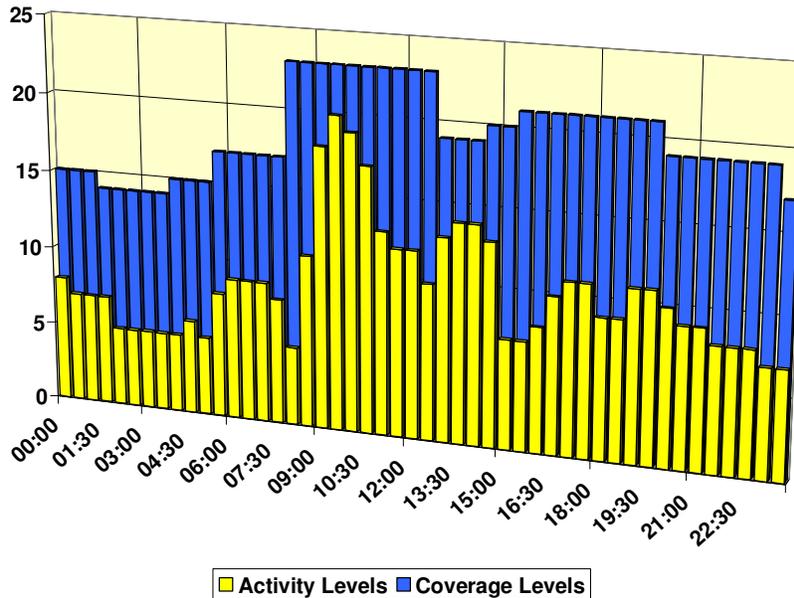
The Autopost Coverage program automatically generates a seven-day coverage graph, showing the total number of employees for each half-hour of the week (see Figure II-8). The graph in Figure II-8 also depicts the activity levels that were charted in Step 2.

The program also generates coverage charts and graphs for each day of the week (see Figure II-9).

**Figure II-8: Sample Seven-Day Coverage and Activity Graph**



**Figure II-9: Sample Coverage and Activity Graph, Monday**

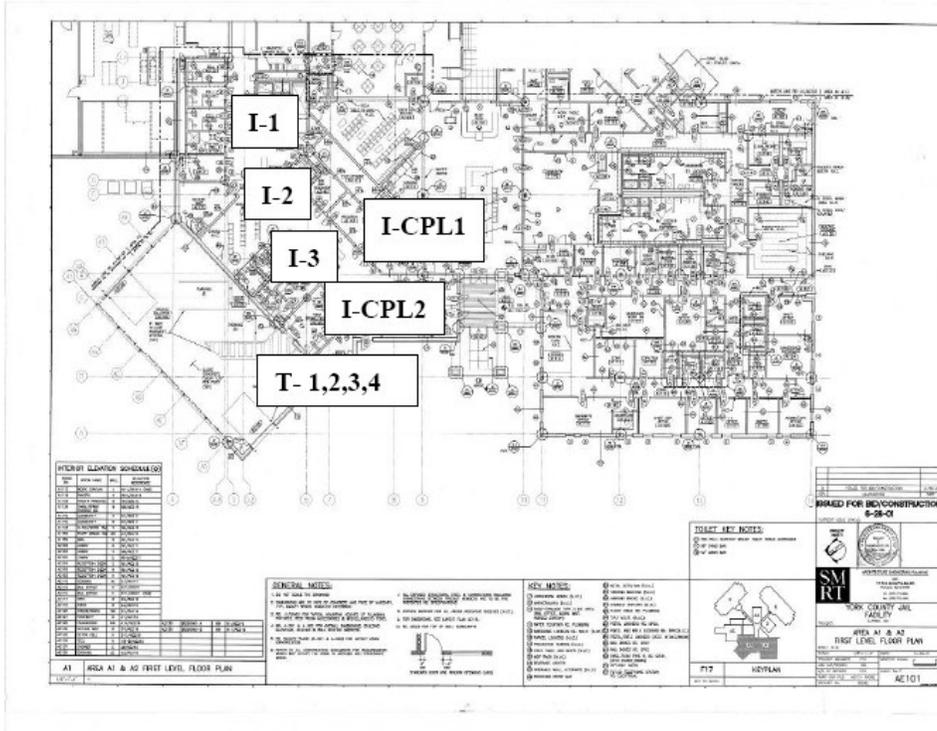


The best coverage plans are developed by a team of stakeholders, informed by the findings from Step 1 and Step 2. Figure II-10 shows one such team working on a draft coverage plan. The floor plan for one level of the facility is projected on the white board, showing the housing units, numbers and types of inmates, and other key information. The location of posts are drawn on the floor plan as they are identified. The hours and days of operation are recorded on a flipchart and are eventually entered into the Autopost program.



**Figure II-11: Sample of Coverage Plan and Post Locations**

**Intake, Administration and Public Entrance**



Code Number	Post or Description	Start Time (0000-2400)	End Time (0000-2400)	Employee Classification	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
I-1	Intake	0000	2400	CO	X	X	X	X	X	X	X
I-2	Intake	0000	2400	CO	X	X	X	X	X	X	X
I-3	Intake State Prisoners	0900	1100	CO			X				
T-1	Transport	0800	1600	CO	X	X	X	X	X		
T-2	Transport	0800	1600	CO	X	X	X	X	X		
T-3	Transport	0800	1600	CO	X	X	X	X	X		
T-4	Transport	0800	1600	CO	X	X	X	X	X		
I-CPL1	Intake Cpl- Vid Arraign and Admits	1430	0030	CPL	X		X	X	X		
I-CPL2	Intake Corporal- Peak Admits	1530	0130	CPL	X				X	X	X

To accomplish this first part of Step 3, you will use the materials and insights that you assembled in Step 1 (profile of the facility including facility layouts, mission, etc.), and in Step 2. Have a copy of the facility floor plan in front of you when you start, or better yet, project it onto a white board and take digital photos of your products.

Several jails have found it effective to start by examining coverage needs according to specific functions, such as:

1. Provide coverage for all inmates in their respective housing units (remember that supervision is not the same as observation).
2. Provide coverage for inmates when they are outside of their housing units (for example when inmates are a sick call, attorney visits, programs, or work).
3. Provide coverage for all inmate movement.
4. Provide coverage for controlling all security doors and features (including perimeter security).
5. Provide first line supervision for all employees on duty at any given time or day.
6. Provide coverage for shift command.
7. Provide coverage for all other areas and functions that have not been addressed yet.

Remember that each post or position identified in this task will be relieved-- it will be filled even when a scheduled employee calls in sick or fails to report for another reason.

**b. Non-Relieved Posts and Positions**

The second task in Step 3 identifies the need for posts and positions that are not relieved when a designated employee does not report for work. For example, when the jail administrator is away at a meeting or out sick, no one steps into his/her position for the day. There are usually many such non-relieved positions, and sometimes posts, that must be identified.

The format shown in Figure II-2 (provided again in Table II-5) may also be used for this step, although you will not need to enter into the Autopost program. Record each non-relieved position and post, identify the classification of employee, describe the hours worked and the corresponding days of the week.

**Table II-5: Coverage Autopost Format**

Code Number	Post Description	Start Time (0000-2400)	End Time (0000-2400)	Employee Classif.	Mon	Tues	Wed	Thurs	Fri	Sat	Sun

The non-relieved positions and posts are not usually depicted on a floor plan, or merged with the relieved posts and positions. Remember that at any time, on any day, one or more of the

non-relieved positions may be vacant for a variety of reasons. Therefore, these positions should not be considered when evaluating the sufficiency of coverage in terms of backup and emergencies.

### **c. Identifying and Estimating Coverage Hours for “Details”**

Tasks a and b have identified and quantified the majority of all coverage needs. In addition to these predictable coverage needs, there are a host of intermittent and often unpredictable activities that demand employee effort. These “details” vary from month to month, and year to year, but nonetheless consume a substantial amount of employee effort.

Any comprehensive coverage plan describes such details and estimates the hours of effort that will be needed in the coming year. An initial list of such details has been assembled in recent years by participants in NIC training events, including:

- Hospital watch/transport
- Special assignments
- CERT – 5 officers
- Window washing (officer to escort maintenance employee)
- Capital equipment inventory, monthly, semi-annually
- Emergency codes
- Medical and mental health transports
- Mass arrest
- Criminal activity in housing unit or other area of jail (investigation, reports, review of records and recordings, etc.)
- Operational breakdowns
- Power failure and/or generators failing
- Loss of equipment
  - Emergency searches
  - Computer failures
  - Mechanical failure/door locks
  - Sprinkler heads
- Tours
- Volume increase booking
- Facility search
- Suicide/attempted suicide
- Outside appointments for inmates- transport
- Medical event (i.e., communicable disease)
- Fire drill
- “2 escorts required”
- Mid-shift vacancy (illness, injury, emergencies)
- Officer funerals
- Honor guard
- Elevator malfunctions
- High risk court event
- Weather event (i.e., blizzard, flood)
- Inmate death

- Bomb threat
- Maintenance projects
- Facility renovation and major repairs
- Court testimony
- Immediate inmate transport
- Employee recognition and meetings
- Group administrative meetings
- Escape
- Numerous transportation runs at the same time
- Special public works projects
- “Hot sheet” inmates
- Judge practices/scheduling
- Inspections (state jail standards, fire marshal, health department and others)

There are certainly additional details that have not been identified in the preceding list, but it provides a starting point. Each agency will have its own unique constellation of details.

Remember: nothing is too small to count, and everything goes somewhere. In some instances, a detail in one jail might be counted in the NAWH calculations in another. No problem-- as long as the time is counted *somewhere* in the staffing analysis process. Table II-6 presents a sample summary of intermittent details from Hennepin County, Minnesota.

**Table II-6: Sample of Intermittent Details Calculations**

	Hours	Classification
<b>(3) Deputy Sheriff's to Water Patrol for the Summer</b>		
3FTEs x 173.3 hours per month x 3 months	1,559.7	Deputy
2006 Total <b>Hospital Guard Hours</b> = 6,901	6,901	Deputy
<b>Detention Deputy Final Interviews(Det Sgt)</b>		
24 hrs per session x 2 sergeants x 6 sessions / 23 FTEs (Weighted Average)	288	Sgt.
<b>Licensed Deputy Interviews</b>		
6 sessions per year 24 hours per session x 1 Lieut	144	Lt.
<b>Licensed Deputy Oral Boards</b>		
6 sessions per year, 24 hours per session 1 Deputy FTE	144	Deputy
<b>Special Response Team (Detention Deputies)</b>		
Orientation (40 hours) x 10 FTEs per year	400	Det Dep
Required Refreshers (16 hours) x 40 FTEs	640	Det Dep
<b>Weekend Duty</b>		
11 slots per year X 16 hours = 176 hours / 4 Lt.s	704	Lt.
<b>ANNUAL TOTAL</b>	<b>10,637</b>	Total

Ensuring that all details are identified and quantified should become an ongoing task for the agency. If these events are not currently documented and quantified, protocols must be established to begin to collect that data and information.

Details are intermittent, and many occur without notice and may not be scheduled. In one 800-bed jail, managers found that employees are required to commit 59 hours to such details on an average day. In the case of this jurisdiction, *none* of these hours were anticipated in the budget. The agency responds to such needs in three ways:

1. Add employees to address the needs using overtime.
2. Absorb the details with existing staff on duty, further stretching employees and often at the expense of key tasks and responsibilities.
3. Reducing levels of service in the facility in order to temporarily free up employees to address the need.

The agency retroactively collected data about such details and found that:

- Total Hours Required to Address Details: 21,539 (equivalent of 13.5 FTE's).
- Overtime created to address details: 11,169 hours.
- No overtime created—details “absorbed” by staff on duty: 5,966 hours.
- Level of service diminished (i.e., pods temporarily closed): 4,404 hours of closure.

Many facilities fail to budget for details. If your agency does not identify, quantify and plan for such activities, you will have to estimate the needs in the first year. Be sure to develop procedures that collect this data for analysis in subsequent years.

### **Coverage- Not Scheduling**

A note about schedules is in order at this point. Try to think of schedules as a means to an end. Schedules allocate individual staff members to specific time periods and days of the week. Coverage needs, as described here, represent what is really needed in the jail at a given time.

An efficient schedule will assign the right numbers and types of staff to correspond with coverage needs, with a minimum amount of “slippage.” While some of us struggle to get enough staff, and really have no control of how much staff we are allocated, we *are* in control of how we use our personnel.

Think of this coverage activity as a tool that might help you increase the effectiveness of your current resources--a tool to help you work smarter with what you already have.

### **Summary**

The coverage plan components are assembled at the end of Step 3, summarized on Form C that adds hours for relieved and non-relieved posts, and details. Consider the initial product as a draft, which will be systematically evaluated for sufficiency in Step 4. Be prepared to revisit some of the coverage decisions and details based on the findings of the evaluation.

Developing an initial staff coverage plan is a trial-and-error process, so be patient and persistent. Make a first attempt, step back and review the results, and then try to find improvements. Be sure to identify all of the tasks and activities that need to be addressed. Step 3 provides some helpful tools to remind you of the range of issues to consider.

### **Creative Solutions to Consider**

In addition to the creative solutions identified at the end of Step 1 and Step 2, the following strategies should be considered.

#### **Employ Creative Administrative and Management Practices**

Changing the way that the jail is administered and managed can relieve staffing pressures and increase staff productivity.

##### **a. Training**

Training is an ongoing activity for all jails, usually creating serious scheduling and overtime problems. Some jails have found that scheduling training to correspond to coverage needs may be efficient. Others have moved toward increased on-the-job training and reduced pre-service and classroom training. In some jails a field training officer (FTO) works with employees during their shifts, at their posts. And the FTO provides another employee on the shift who is available to respond to emergencies.

Training provided as part of routine shift briefings may also be efficient and effective. Objective testing to ensure staff competency sometimes reduces the need to train or retrain staff, and at a minimum improves the effectiveness of all training activities.

Emerging training technologies—such as correspondence courses, computer-based training courses, distance learning, and video-based training—can greatly reduce scheduling problems. The National Academy of Corrections offers a variety of certified computer-based training programs for jail officers, first line supervisors and managers.<sup>5</sup>

##### **b. Supplementing Full Time Employees**

Supplementing full-time employees with alternative sources of assistance can be effective if it is carefully considered. Some responsibilities that are currently assigned to full-time staff may be shifted to other people, such as volunteers, interns, part-time staff, seasonal staff, or peer instructors (e.g., an inmate who would tutor another inmate in a high school equivalency class). Many jails routinely use college interns for ongoing jail tasks, and realize additional benefits when the interns often apply for employment after graduation.

##### **c. Improve job descriptions**

Closely examine current job descriptions. Do they accurately and fully reflect the duties assigned to each classification of staff? Consider updating these profiles and use the opportunity to incorporate

---

<sup>5</sup> U.S. Dept. of Justice, National Institute of Corrections, Academy Division. [www.nicic.org](http://www.nicic.org).

new ideas and approaches. Use the insights gained from examining tasks in Step 2 to identify improvements. Some jails find it helpful to have civilian staff for many jobs and tasks that do not involve direct contact with inmates.<sup>6</sup>

### **Improve Use of Technology**

Emerging technology offers promising tools to improve staff efficiency and effectiveness. However, technology *rarely* reduces staffing needs. Rather, technology can be appropriately and effectively used to enhance staff performance and improve facility operations. Beware of salespersons who promise “staff savings” by deploying their new equipment. Courts have ruled that such technology as closed-circuit television is appropriate only to “supplement rather than supplant” staff.

Figure II-12 outlines *some* of the potential uses for emerging technology.

#### **Figure II-12: Potential Uses of Emerging Technology**

##### **Type of Technology Possible Uses in the Jail Setting**

###### **Perimeter electronics (motion detectors, buried sensors, etc.)**

- Reduce the need for staffed posts or towers on the perimeter of the facility or on the grounds.
- Enhance existing physical barriers, such as walls and fences.
- Enhance other electronic surveillance devices, such as closed-circuit television.

###### **Bar coding and other scanning devices**

- Improve inmate identification practices.
- Streamline property, evidence, and clothing inventory.
- Enhance admission and release procedures.
- Enhance internal movement of inmates and staff.
- Provide new information and data about jail operations.
- Reduce paperwork.

###### **Closed-circuit television and DVD recorders**

- Enhance internal and external surveillance.
- Provide visual record of operations and incidents.
- Deliver programs and training to multiple locations without moving inmates or staff.
- Record programs for repeated presentation.
- Deliver information and programming throughout the jail from a single source.

###### **Video conferencing**

- Enable visits between inmates and attorneys, family, and others who are visiting off site.
- Enable arraignment and other court proceedings without transport.
- Enable telemedicine consultation.
- Provide programs and training for staff and inmates through distance learning.

---

<sup>6</sup> If using civilian employees, be sure to remember that in an emergency they are not authorized to oversee inmates, and in some instances will require assistance themselves.

### **Telephone systems**

- Give staff portable phone capabilities within the facility and off site.
- Improve and streamline phone traffic management (e.g., automated answering and call-direction).
- Reduce the need to supervise inmate phone calls by eliminating the opportunity for abusing the privilege.

### **Security controls**

- Elevator controls can allow inmates and the public to operate elevators without staff assistance.
- New security control panels, such as touch screen, can increase the efficiency and accuracy of staff and consolidate more functions in one location.
- Transmitters for door controls allow staff to open doors without being at the control panel.

### **Debit cards and similar automated inmate account tools**

- Automate inmate financial transactions, improving accuracy and recordkeeping in the commissary and reducing paperwork.

### **Computers**

- Improve overall inmate recordkeeping practices.
- Streamline intake and release procedures.
- Provide inmates with programmed learning opportunities that are self-paced and flexible in terms of time and location.
- Provide staff with new training tools.

### **Kiosks**

- Commissary.
- Visitor sign in.
- Work-release ride sign ins.
- Temporary identification issue/tracking.
- Grievances.
- Medical and other requests.

### **Resources**

- Sample reports.
- Appendix A: Project Manager's Guide

#### Step 4: Evaluate the Coverage Plan

If the coverage plan is deficient in any way, subsequent efforts to prepare a budget and deploy employees through scheduling will also be deficient.

Before taking the time and expense of developing a schedule, and possibly raising the concerns of staff, it also makes sense to thoroughly evaluate your coverage needs. The primary concern with this step is to ensure that the coverage plan is *sufficient*-- that enough employees, with the right capabilities, are available when needed. A secondary concern identifies potential inefficiencies, instances in which staffing levels exceed needs.

This step is the most important one in the process. In many ways, the staffing analysis process requires a “trial and error” approach through which you test various operational changes, organizational structures, coverage schemes, and schedules.

The evaluative step is critical for both the veteran staffing analyst and the first-time user. It allows you to examine your work systematically up to this point and to identify problems before a schedule is developed, a report is written and before the plan is implemented. This step is the “equalizer” that puts the first-time user on equal footing with someone who has completed many staffing analyses. More important, it ensures that your expertise is central to the completion of the staffing plan.

As we move this evaluative step earlier in the process, we also return to some effective tools from the First Edition of the NIC workbook. The earlier edition provided a more thorough approach to the evaluative process, in three components:

- a. Evaluate “internal” efficiency and consistency.
- b. Complete the Evaluative Checklist that is based on the national Core Jail Standards.
- c. Complete additional checklists and evaluative procedures (optional).

Completing the first two components is considered essential in this process. The third offers additional resources for those who find it necessary or desirable to expand on their evaluative efforts.

The evaluative process identifies problems or deficiencies with your coverage plan. As these problems are identified, you will need to return to earlier steps in the staffing analysis process to revise your work:

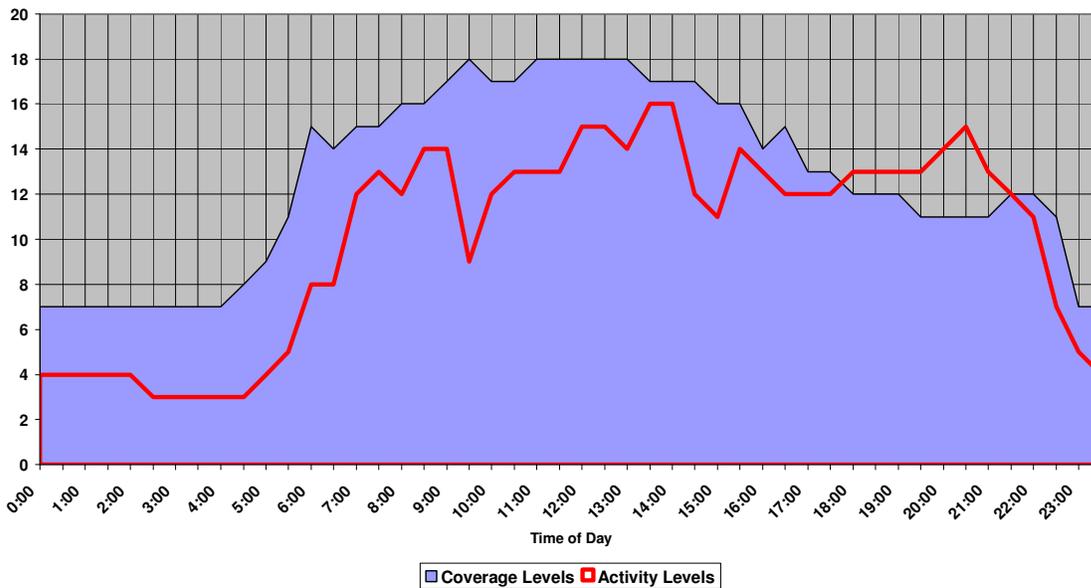
- In Step 1 (Describe the Setting) you consider changing policies and practices to facilitate staffing efficiencies. This might include changes in separation (e.g. which inmates are allowed to participate in programs together) or how your facility is used (e.g. which inmates are housed in specific areas) or many other refinements in how you operate the jail.
- In Step 2 (Activities) you consider further refinements in your daily activity schedule to reduce the peak demands for staff, and you might want to move some activities to times when staffing demands are lower.

- In Step 3 (Coverage) you should identify additional efficiencies that ensure that staff are deployed only when they are really needed.

a. Evaluate "Internal" Efficiency and Consistency of Plan

The first component of the evaluation is to carefully review the work that has been recorded on several forms and graphs. The graph that you made in Step 2 of activity levels should be compared to the one you made of coverage levels in Step 3. While activities and coverage do not correspond on a one-to-one basis, comparing the two graphs helps identify inconsistencies. In other words, coverage and activities should co-vary, if activities increase, so should staffing and vice versa.

**Figure II-13: Comparison of Activity and Coverage Levels**



In Figure II-13 you will note that from the hours of 1800 to 2200, the number of staff does not seem to correspond to the level of activities. This might suggest the need to modify either the activity levels or coverage, or perhaps both. While it might seem easier to simply assign more staff, this will usually be the most expensive solution. Modifying activities may be a bit more trouble, but it may yield new efficiencies. Changing an activity schedule may have a “domino effect” in which a change might impact several other aspects of the activity schedule. But managers usually have more control over their operations than they have over their budget. Finding ways to “work smarter” may pay off in many ways.

Figure II-13 also suggests that coverage levels are significantly higher than activity levels for the first several hours of the day. This reflects the need for a minimum level of staffing to ensure the safety of inmates in the event of an emergency. Since activities levels are so low, there are opportunities to find ways to use the extra staff hours that must be deployed. This might involve moving more activities from the day and evening hours to the early morning, such as creating court lists, updating logs and records, and similar administrative tasks. It also offers opportunities for supplementing staff training through emerging technologies, such as computer-based learning. By training staff while they are on post, the Net Annual

Work Hours (NAWH) would be increased, as those required training hours that would otherwise be used off of shift, are being used during down times on shift.

The goal in this analysis is to provide enough staff at the right times, without maintaining higher levels of staffing when activities do not require them.

Many staffing plans will be deficient because too few staff are assigned. When this happens, tasks go undone, employees are overworked, and sometimes critical errors are made.

Other staffing plans will be deficient because staff assignment does not drop when it can (based on activities). In these instances, all tasks are accomplished, but at a higher cost than might be necessary. Few jails have the luxury of assigning more staff than they need at any time of the day. When this happens, it usually means that there will be other times that are left with insufficient staffing resources. One county discovered that its current schedule deployed far too many employees at some times and days—over ten percent of the time. Because these regular hours were expended at times that did not address coverage needs, there were insufficient hours to fill all posts at other times. Eventually, the county was able to take control of the schedule again and deploy employees only when needed.

If you have identified major deficiencies at this point, you may elect to correct them before you proceed with the evaluation. If you do, be sure to pick up this process where you left off.

#### b. Complete the Evaluative Checklist

The Evaluative Checklist (Appendix H) provides a template for evaluating your staffing plan and its component parts from a variety of perspectives.

- Part 1 addresses internal consistency and plan efficiency.
- Part 2 asks key questions concerning coverage.
- Part 3 provides a method to assess operational adequacy.
- Part 4 raises standards compliance issues.
- Part 5 evaluates provisions for “backup.”
- Part 6 suggests ways to secure broader review and comment.
- Part 7 provides a summary chart for problems and an aid to diagnose the appropriate responses.

Part 1 provides a format for comparing the consistency of your activity and coverage levels, such as the comparison graph in Figure II-13.

Part 2 poses a series of key questions, such as:

- Does the plan present any conflicts with existing employee contracts or agreements?
- Does the plan pose any problems in terms of shift changes during key periods of the day?
- Is supervision provided for all staff at all times?

Part 3 applies a series of “scenarios” to your coverage plan to gauge its sufficiency. These ask you to “walk through” several operational procedures using the coverage plan. For each

of the issues you should consider the steps involved with implementing the practice, with an emphasis on:

- Who is involved or responds?
- How long does the function take?
- What areas or functions are left uncovered?
- Are all involved staff qualified?

A shopping list of scenario topics is provided to get you started, including such activities as:

- Serving meals to all inmates under staff supervision.
- Processing new arrivals.
- Implementing inmate visiting.
- Providing inmate exercise/recreation.
- Conducting sick call.
- Delivering inmate medication.
- Conducting formal counts.
- Implementing inmate programs.
- Moving inmates to and from court.
- Conducting staff meetings.
- Exchanging inmate clothing and linen.
- Distributing and collecting mail.
- Conducting an evacuation drill.
- Conducting roll call during shift change.
- Conducting hearings and other administrative meetings.

Part 4 examines compliance with standards. State standards provide one critical source of evaluation for coverage plans. More than half of the states have some form of jail standards, and many of these states conduct periodic inspections of jails. Although these inspections are often unannounced, they provide a limited assessment of the jail, based on conditions and operations observed *at the time of the inspection*. While such inspections are important management tools, they should be considered only one element of your continuous quality improvement plan,

In addition to state standards, professional standards have been promulgated by several organizations, including the American Correctional Association (ACA). In 2009, ACA adopted new minimum jail standards. The Core Jail Standards are a subset of the broader set of professional standards, presenting the minimum requirements for operating a constitutional jail. Part 7 of this step provides a checklist based on the new Core Jail Standards.

For each issue that is identified in the standards, you will need to determine if your coverage plan allows you to comply with standards:

- At all times.
- For every type of prisoner.
- In all areas of the facility.

Some of the issues identified through the standards include:

- Maintaining records and management information systems.
- Providing continuing observation and around the clock supervision of inmate housing areas.
- Providing enough staff to ensure prompt release from locked areas in the event of an emergency.
- Maintaining a control center.
- Providing assistance from another staff member whenever an officer enters a high security housing area.
- Protecting inmates (from abuse, corporal punishment, personal injury, harassment).
- Implementing disciplinary procedures, reports, and hearings.
- Conducting inmate classification.
- Providing inmates with physical exercise.

Part 5 asks you to look at your coverage plan in terms of the provision of “backup” for staff. To assess backup needs, you will be asked to consider a series of contingencies in various locations in the facility, such as:

- A disturbance in a cell area.
- A combative prisoner in the booking area.
- A fire requiring evacuation of the facility.
- A planned use of force.

For each of the contingencies you will pick a location, a day of the week, and a time of day. You will consider how staff will react to the problem:

- Which staff will move to an area to provide backup?
- How long will it take?
- What areas are left uncovered as a result?

If backup assistance is to be provided by one or more external entities, such as a local police department, you need to be realistic about the availability of personnel for backup and the corresponding response times.

Part 6 guides you through a process of involving more people in the evaluation of the coverage plan. One of the best evaluative methods at this point in the process is to share the draft coverage plan with staff and officials and to solicit their comments and concerns. This will help to ensure that the plan is scrutinized from several perspectives.

You should consider seeking comments from:

- Line staff (including a sampling of those assigned to different posts).
- First line supervisors.
- Mid-management staff.
- Contract service providers (medical, education, counseling, etc.).
- Program and activity staff.
- Administrative and clerical staff.

- Support staff (maintenance, food service, etc.).
- Human services personnel.
- Budget-setting and management personnel
- Advisory committees or other groups that advise the jail.
- Jail inspector.

Some jails actually ask *all* staff to review and comment on coverage plans.

Part 7 provides a method for recording all of the deficiencies and concerns that have been identified, and analyzing each in terms of the potential solutions that should be considered. A "diagnostic" tool helps you determine which step(s) are needed to correct problems. Consider a "brainstorming" approach to improve your plan: assemble a team, put all the deficiencies on the table, and go to it.

c. Complete additional checklists and evaluative procedures (optional)

The Evaluation Checklist in Appendix H provides two additional evaluative resources as appendices. Each provides a more detailed and focused evaluation.

The Core Jail Standards Checklist converts elements of the minimum standards developed by the American Correctional Association into a series of questions. Completing this checklist provides an indication of compliance with the professional standards and points to weaknesses with the breadth of services provided.

The Time/Task Analysis Worksheet is a more complicated tool. This worksheet offers a different perspective on the adequacy of the coverage plan. It requires delineating tasks to be completed at given times, determining the amount of time required to complete each task, and, after adjusting for "down-time," comparing required time with allocated staff. This tool has proven very effective in resolving disputes about the adequacy of staff at a specific post.

Re-Evaluate After You Make Changes

The changes you make in response to deficiencies may create other problems. Re-evaluate revised coverage plans thoroughly. Use the results of secondary evaluations to guide further revisions. Continue with the "evaluate-revise-evaluate" loop until an evaluation yields satisfactory results. When your coverage plan receives a clean bill of health from an evaluation, you are ready to think about scheduling.

Be sure to record all changes you make during the revision process, including changes in the jail setting (operations, facility). This will leave important "tracks" that will be helpful later in the process and in subsequent reviews.

Remember that developing a coverage plan is often a trial-and-error process, so be patient and persistent. Make a first attempt, step back and review the results, and then try to find improvements.

When Hennepin County, Minnesota, completed this step of the process, participants identified several deficiencies that were addressed with revisions to the draft coverage plan. These included coverage shortfalls in the following areas:

- Maintaining records and management information systems
- Providing continuing observation and 24-hour *supervision* of inmate housing areas
- Providing enough staff to ensure prompt release from locked areas in the event of an emergency
- Maintaining a control center
- Providing assistance from another staff member whenever an officer enters a high security housing area
- Protecting inmates (from abuse, corporal punishment, personal injury, harassment)
- Implementing disciplinary procedures, reports, and hearings
- Conducting inmate classification
- Providing inmates with physical exercise

After revising their draft coverage plan to address these deficiencies, officials reviewed the coverage plan to ensure that the revisions did not create other deficiencies.

### **Creative Solutions to Consider**

Review the strategies presented at the end of the preceding steps to identify approaches that might improve the draft coverage plan.

### **Resources**

- Sample reports from other jurisdictions
- Appendix H: Evaluation Checklist

## Step 5: Developing Schedules and Evaluating Efficiency

*At this stage of the staffing analysis process, the technical aspects of the remaining steps will involve only a few persons. While the hands-on work might be limited, there is still a need for broad review and comment on the draft product. The project manager's guide in Appendix A offers tips and strategies for securing meaningful participation.*

A good schedule efficiently meets jail coverage needs, but schedules often take on a life of their own and begin to drive operations, rather than respond to operations. We have encountered many jails where the schedule is the tail that is wagging the dog, by forcing operations to adapt to the schedule.

### Coverage plan is the foundation on which the schedule is built

Using 30-minute or 60-minute units to examine coverage gives your pencil a fine point as you describe the ups and downs of daily jail operations and coverage needs. But it is also necessary to pull back a bit further and look at larger units in order to understand the relationship between coverage and schedules.

## Evaluating Current and Potential Schedules

### Coverage Plan Is Key

How do you know whether your current schedule, or one you are considering, is appropriate? The starting point is to compare the *actual* deployment of staff according to the schedule to the *coverage* needs that you have previously identified. A good schedule provides the right numbers and types of staff, at all times, to meet identified coverage needs.

There are other considerations that contribute to the evaluation of a schedule. We suggest that schedules must be:

- **SUFFICIENT.** Providing at least as many staff for each hour of each day that has been determined in the coverage plan (and the right *type* of staff). The schedule should never assign fewer staff than are required by the coverage plan. Some jurisdictions refer to coverage needs as their “minimum” levels of staff, below which they cannot safely operate.
- **EFFICIENT.** Minimizing the number of “extra” staff deployed by the schedule (“extra” staff are the ones scheduled to work above the number required by the coverage plan).
- **CONSISTENT.** Minimizing variations throughout the schedule cycle.
- **ATTRACTIVE.** Generating employee support by meeting their needs, being considerate of their personal preferences, and offering incentives to stay with the organization.
- **HEALTHY.** Promoting staff physical well-being and performance.

Each of these evaluative perspectives is explored by posing the questions that follow.

### Is the Schedule Sufficient?

You cannot answer this question accurately without a coverage plan. But once you have one, you have an ideal tool to identify every instance that your schedule falls short of coverage needs.

When you developed your coverage plan you identified the number and types of staff needed using a spreadsheet. This provided the basis for the mathematical calculations that are needed to determine the number of full-time-equivalent (FTE) staff needed in the budget. This spreadsheet technique proves just as effective and accurate when it comes to schedules. A new tool has been developed for this purpose, Form E.

Most jails operate with three, 8-hour shifts, or two 12-hour shifts.<sup>7</sup> Although we have developed a version of Form E that uses 30-minute increments to examine coverage and schedules, we will use another variation-- using shifts as the unit of measure-- to illustrate the larger picture.

To evaluate the sufficiency of a schedule according to shift assignment levels, Use Form E to identify the work days and off days for each staff member assigned to a shift. Use a "1" to record a work day, and a "0" (the number zero, not the letter o) to record a scheduled off day.

Table II-7 provides a sample of Form E, using a shift that has 19 employees assigned to it on a 5 on/2 off staggered schedule.

When you are finished recording the work and off days for each employee, add the numbers in each column to determine how many persons are scheduled for each day (Row A). Enter the totals from the coverage plan below the scheduled coverage figures (Row B), and then calculate<sup>8</sup> the difference (Row C) between scheduled staff and coverage needs with this simple formula:

$$\text{Scheduled Hours } \textit{minus} \text{ Coverage Hours} = \text{Difference (plus or minus)}$$

Table II-7 demonstrates the irregularity of many schedules. Because the number of employees is not divisible by seven (7 days in a week), the number of employees scheduled per day ranges from 12 to 15. It may be possible to adjust the employees on/off days to bring the scheduled employees closer to the coverage needs.

When the schedule falls below minimum coverage needs, the difference (Row C) will be a negative number. When the two numbers match, your schedule has efficiently provided the right number of staff to meet coverage needs. When there is a positive number, your schedule provides more staff than you have determined are needed.

---

<sup>7</sup> Many jails use variations of 8-hour shifts to tailor scheduling to coverage needs, sometimes lengthening the shift beyond 8 hours, sometimes by moving the start- and end-times of a shift, or a combination of these techniques.

<sup>8</sup> Form E has this, and other formulas, embedded in the template.

**Table II-7: Form E- Comparing Scheduled Shifts to Coverage Needs  
19 Employees, 5 Days On/ 2 Days Off, Staggered Schedule**

Employee Name	Sun	Mon	Tues	Wed	Thur	Fri	Sat	Total Days Scheduled
A	0	1	1	1	1	1	0	5
B	0	0	1	1	1	1	1	5
C	0	1	1	1	1	1	0	5
D	0	1	1	1	1	1	0	5
E	0	1	1	1	1	1	0	5
F	0	0	1	1	1	1	1	5
G	1	0	0	1	1	1	1	5
H	1	0	0	1	1	1	1	5
I	1	1	0	0	1	1	1	5
J	1	1	0	0	1	1	1	5
K	1	1	1	0	0	1	1	5
L	1	1	1	1	0	0	1	5
M	1	1	1	1	0	0	1	5
N	1	1	1	1	1	0	0	5
O	0	0	1	1	1	1	1	5
P	1	1	0	0	1	1	1	5
Q	1	1	1	0	0	1	1	5
R	1	1	1	0	0	1	1	5
S	1	1	1	1	0	0	1	5
<b>A. Total Scheduled</b>	<b>12</b>	<b>14</b>	<b>14</b>	<b>13</b>	<b>13</b>	<b>15</b>	<b>14</b>	<b>95</b>
<b>B. Total Coverage Needed</b>	<b>12</b>	<b>16</b>	<b>14</b>	<b>13</b>	<b>14</b>	<b>14</b>	<b>15</b>	<b>98</b>
<b>C. Coverage Needs Minus Scheduled Employees</b>	<b>0</b>	<b>-2</b>	<b>0</b>	<b>0</b>	<b>-1</b>	<b>+1</b>	<b>-1</b>	<b>-4 and +1</b>

In others words, when the difference between scheduled hours and coverage hours is:

- A negative number, your schedule is *insufficient* to meet coverage needs.
- A positive number, your schedule *exceeds* coverage needs.
- Zero, your schedule *matches* coverage needs.

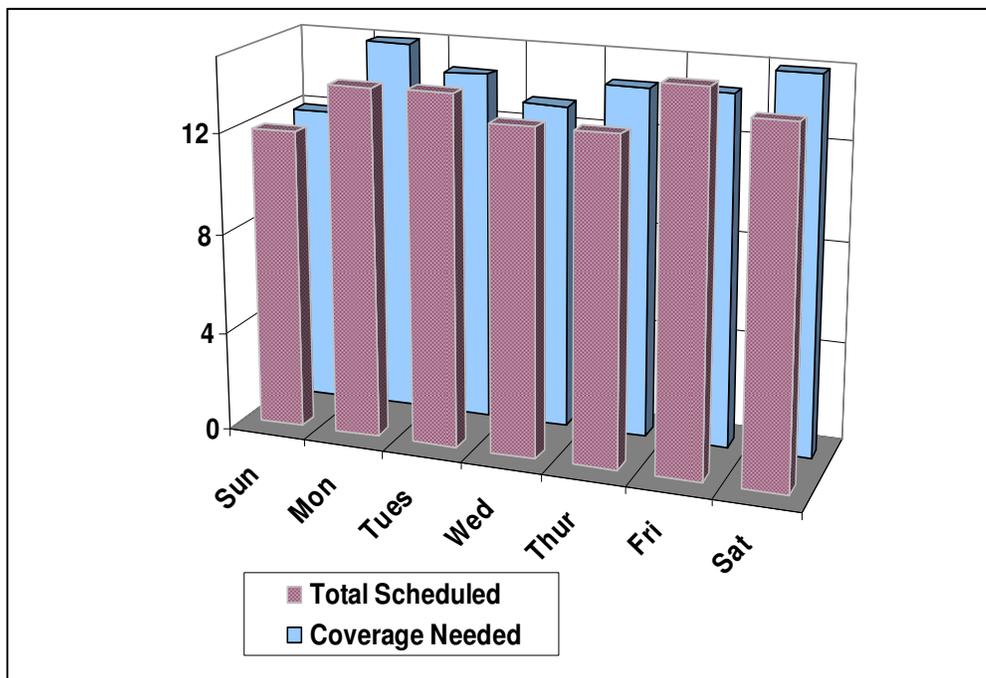
In the sample in Table II-7, total scheduled shifts fall 3 short of total coverage needs (98 minus 95.) In practice, the variance between schedule and coverage is actually 5 (the absolute value of the sum of -4 and +1.)

If your analysis identifies serious discrepancies, you should evaluate current practices to identify potential changes that will level out the schedule. If these are not possible it will be necessary to consider alternatives schedules.

Form E also provides the ability to *graphically* identify the relationship between the scheduled shifts and coverage needs. The chart in Figure II-14 was drawn from Rows A and

B at the bottom of the sample in Table II-7. Whenever the height of the scheduled employees bar in the graph falls below the coverage bar for a specific day, there is a problem with sufficiency.

**Figure II-14: Chart from Table II-7, Coverage and Schedule**



At this point you may be wondering why the scheduled hours vary as they do. After all, if you schedule X staff for a shift, does that not always deliver X staff? The answer is “*not always.*” Depending on several characteristics of your schedule, the number of assigned staff will vary-- sometimes markedly-- from day to day, and often from week to week. If this variation matches the variation in coverage needs, the difference will be reduced but probably not eliminated.

#### Is the Schedule Efficient?

Fortunately, the same techniques used to determine sufficiency also indicate efficiency. A negative number in our previous calculations told us that the schedule was insufficient. A positive number (see Table II-7) suggests that the schedule is *inefficient*. The positive figures and totals in Table II-7 numerically suggest the efficiency-- or lack of efficiency of the schedule when compared to coverage needs. Figure II-15 illustrates the variation between scheduled employees and coverage needs.

Few jails have enough money to assign staff when they are not really needed. Sure, we can always use more staff at just about any time, but remember there are costs to these apparent windfalls. For every hour that a staff member works above coverage needs, that hour is no longer available to be used to meet coverage needs at regular pay. When an employee’s regular hours are used up, you must pay at least a 50% premium as overtime or compensatory time, and the costs will mount even faster.

Even worse than the potential costs, you might find yourself *unable* to replace the hours, leaving subsequent shifts short of staff, thereby creating inequities for your staff and increasing the risk to staff and inmates. This is where the numbers in Rows C come into play (Table II-7). The example in Table II-7 shows that five shifts fall outside of coverage needs—four shifts below, and one shift above.

Is the Schedule Consistent?

The mechanics of schedules are often deceiving. What looks simple and straightforward on paper sometimes produces erratic results from week to week during the cycle. Consider a situation recently encountered in a jail that has a two-week schedule cycle. As we charted the actual hours and days worked, we discovered marked differences between staffing levels in the first and second weeks. Figure II-15 illustrates the inconsistencies in the two week cycle.

**Figure II-15: Example of Inconsistent Schedule (Two Week Cycle)**  
 Scheduled hours for WeekTwo2 are shown in front of Week One

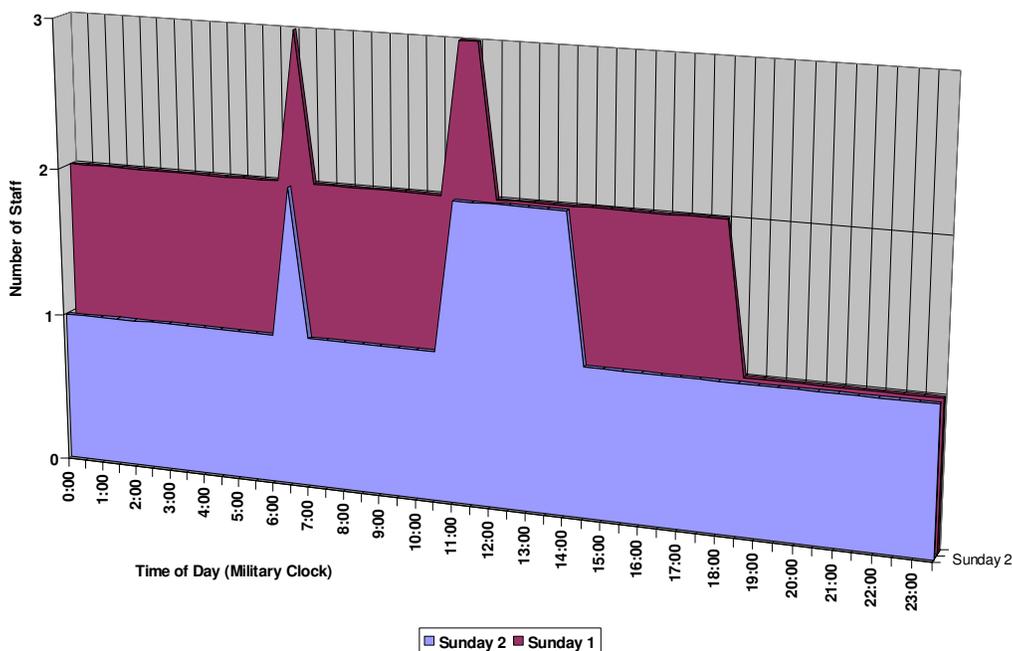


Figure II-15 is generated from a spreadsheet that records scheduled staff in 30-minute increments. By placing the first week of the cycle in front of the second week, we highlight the difference-- the inconsistency. It is not unusual to find such variations during the cycle of a schedule. When this occurs, it opens the door for budget officials to ask, “If you get by with the lower number of staff during at those times in the second week, why do we need the additional staff in the first week?” But using the technique presented in Form E, you may avoid such questions by evaluating the sufficiency and efficiency against the underlying coverage needs and using your findings to improve your schedule.

When a schedule is shown to be inconsistent the only solution is to adopt a new schedule that consistently responds to coverage needs.

## Is the Schedule Attractive to Staff?

In most jails it is difficult to find and retain qualified jail employees. We must be careful to ensure that our scheduling practices do not contribute to these challenges. Better yet, we should strive to adopt schedules that attract and help to retain staff.

Many jail employees are represented by a union or some sort of bargaining unit. Employee contracts often address specific scheduling criteria or issues. Consider these contracts as you evaluate and improve schedules.<sup>9</sup>

We must be mindful of the many ways that our approach to scheduling may encourage or discourage prospective and current employees. If that were not difficult enough, we also need to acknowledge that our employees often do not agree among themselves when it comes to scheduling issues and preferences.

Here are some of the factors to consider when evaluating how attractive your schedule might be to your employees:

- *Length of work day.* Some employees do not want longer shifts, such as 12-hour shifts.
- *Number of days worked.* Some shift configurations require fewer days of work each week, such as 12-hour shifts.
- *Shift worked-- time of day.*<sup>10</sup>
- *Days off-- consecutive days.* Proponents of 12-hour shift configurations note that staff members actually work fewer days in the year, reducing transport cost and time and parking costs.
- *Days off-- weekend days.* Many schedules produce the same days off for each staff person throughout the year (great for those who have one or two weekend days off, not so great for those who end up with no weekend days off).
- *Consistency from week to week with regard to days off.* Some schedules end up changing the days worked from week to week, making it more difficult for staff to adapt and to cope with their personal and family needs (but often resulting in a more equitable distribution of weekend days off).
- *Consistency from week to week with regard to work hours.* Some schedules employ a “swing shift” that overlaps two traditional shifts. This is sometimes unpopular with staff.
- *Something to work toward.* In addition to gaining seniority and moving into more desirable posts, employees who gain longevity in some jails are able to choose from a variety of shift configurations, such as a 4/10 (four, 10-hour days).
- *Work conditions.* Staffing levels are a key factor when your employees evaluate their work conditions. If some shifts provide insufficient staff, the employees who must work on those shifts become less satisfied with their working conditions during those shifts.
- *Ability to use earned time off.* Some schedules require limits on the number of employees who may schedule time off.

---

<sup>9</sup> Note that the stakeholders who should be involved with the staffing analysis include union representatives.

<sup>10</sup> Remember that some employees actually prefer to work afternoons or nights.

These are just *some* of the factors that make a schedule attractive to current and prospective staff.

The best way to find out what is important to your staff is to ask them. Better yet, involve them with the evaluation and improvement of your schedule.

### Does Your Schedule Promote Staff Health and Performance?

There is ample research to prove that some work schedules are unhealthy for staff, and that some schedules reduce the ability of staff to properly and consistently perform their duties.

Some professionals believe that a 12-hour shift in a jail is too taxing for jail employees, causing their performance to fall off in the latter hours. Others are adamant that jail employees are perfectly capable of working effectively for 12 hours. The research is split on this question. Some jails require employees to work longer than 12 hours, often for 16 hours or more, and there is agreement that this is not only unhealthy but also poses higher risks of poor performance when done to excess.

Health and performance considerations are associated with:

- Working an employee too long at one time.
- Providing insufficient time between shifts to rest.
- Requiring too many days to be worked in a row.
- Changing work hours frequently (e.g. rotating staff from days to evenings and nights).
- Posing a higher likelihood that staff will be required to work overtime.

When it comes to evaluating health and performance issues, employees should be asked for their opinions, but managers should also understand that what might be attractive to some employees may not necessarily be best for the organization. Some of the longer shift configurations (such as 12-hour shifts) are extremely attractive to employees for personal reasons (e.g. more days off) and sometimes for financial reasons (e.g. more time to work a second job.)

We encountered one jail that adopted a 12-hour shift configuration, where staff had the same number of days off as they had on the job. The official who adopted this schedule cited the benefits for employees' families-- having more time at home-- as the primary consideration that prompted him to go to 12-hour shifts. But a survey of jail employees staff revealed that every one of them had used the time off to take a second job, and some even worked full-time in these other jobs. What was a well-intentioned gesture by the official produced a situation in which many employees reported for work tired and stressed.

Appendix K presents research findings from various studies that have examined the health implications of "shift work." The findings are outlined in the following narrative.

All 24 hour operations must address shift work. The question is not whether to have shifts, but how best to manage them and in what ways can one ameliorate the negative effects – both for the workers and for the organization.

Shift work affects circadian rhythms. "Circadian," in Latin, literally means "about one day" and refers to the various cycles of a living organism that function on or are somehow related

to the 24 hour cycle of a day. Human performance is most seriously affected when people are awake and working during hours of their biological night, and the impact is most detrimental in the hours before normal waking.

### Managing shift work

One approach is to address the nature of the shifts themselves:

- Length of shift.
- Time on shift.
- Timing of shifts.
- Time between shifts.
- Rotation schedule.

Another strategy is to provide training in ways to manage time and recognize symptoms of sleep disorders, and provide professional support to deal with problems as they arise.

### Length of shifts

Extended shifts for medical interns have long been seen as hazardous to work performance. Workers on shifts of 12 hours or longer, when combined with schedules that have more than 40 hours of total work per week, show increased fatigue reduction in alertness, cognitive functioning, performance on vigilance tasks, and increases in level of injuries and health complaints.

In industrial settings, longer shifts, whether from regular schedules or overtime, have led to much higher accident and injury rates. Working at least 12 hours per day was associated with a 37% increased risk of injury. Working 60 hours or more per week led to a 23% increase. There appears to be a linear relationship between the number of hours worked per day and the rate of injuries. There is also a higher risk of accidents during night shifts, and one study found 10 hour shifts had a 13% increased injury risk than 8 hour shifts, with 12 hour shifts having a 27% greater risk of injury.

Even though many workers claim that their social and domestic life is better with 12 hour shifts, performance declines compared to 8 hour shifts according to one study.

### Time between shifts

Recent research suggests that the time available to workers between shifts may be important in order for to get necessary amounts of sleep. In one study, nurses working with less than 16 hours between shifts had less than their required amount of sleep. The authors of the study recommended 16 hours as a minimal time between shifts.

### Speed of rotation

Some agencies require employees to move from one shift to another on a regular basis. Studies found that employees who worked only a few weeks on a shift before changing to another had little ability to adjust circadian rhythms to time changes, causing continual

disruptions in sleep patterns. Slow changes in shifts (several months or more) allow for circadian patterns to adjust and change, although some argue that for many total adjustment is never made, leading long term negative effects.

Another strategy is to provide training in ways to manage time and recognize symptoms of sleep disorders, and provide professional support to deal with problems as they arise.

#### Direction of shift rotation

Workers adjust more easily to shift changes when their schedule allows them to shift in a forward clockwise direction, (day, evening, night) than when changing shifts counterclockwise.

#### Breaks during shifts

Studies suggest that frequent short breaks during overnight shifts are more effective than one long break in increasing levels of alertness. “The severity of the effects from shift work stress is directly related to the recovery time necessary to offset those effects”<sup>11</sup>

#### Training

Several researchers have suggested that one can reduce negative effects of shift work by providing training for staff members in a number of areas such as ways to enhance sleep, safety procedures, family issues and when and how to recognize sleep disorders and seek professional help. One study suggested that staff turnover rates can be substantially reduced by implementation of such programs. Employees may also be able learn better ways to make use of caffeine, such as in coffee, to reduce sleepiness and increase alertness. A recent study found that, rather than drinking large amounts of coffee at one time, “high-frequency low-dose caffeine administration is effective in countering the detrimental performance effects of extended wakefulness”<sup>12</sup>

#### Regulation of overtime

Accidents, especially while driving home from a shift, are a serious concern when staff members are drowsy from overnight shifts or significant overtime. Managers need to take care of amount of overtime and condition of staff leaving the institution. One study found this to be especially prevalent with 12-hour shifts. The authors recommended systematically regulated overtime and tracking it use in order to avoid further extension of wakefulness wherever possible (or so that additional safeguards can be used if wakefulness is extended beyond acceptable limits).

---

<sup>11</sup> Van der Hulst & Guerts, 2001, cited in Swenson, D. X., Waseleski, D., & Hartl, R. (2008). Shift Work and Correctional Officers: Effects and Strategies for Adjustment. *Journal of Correctional Health Care*, 14(4), 299.

<sup>12</sup> Wyatt, J. K., Cajochen, C., Ritz-De Cecco, A., Czeisler, C. A., & Dijk, D. J. (2004). Low-dose repeated caffeine administration for circadian-phase-dependent performance degradation during extended wakefulness. *Sleep*, 27, 374-381.

## Physical conditions

Circadian rhythms respond to levels of light and dark. Providing high intensity lighting (1000 lux or greater) in the workplace can help reduce sleepiness. It may be just as important to assure darkness at home for sleeping with drapes, eye masks, and other methods.

We expect our employees to voice their self-interests and we should encourage that. That means that it is up to managers to speak for the jail and its operations. Making a schedule healthier for employees, and more likely to improve their performance, may not be popular with them. Managers and officials must balance employee interests with the needs of the jail.

## Summary

So far in this step we have described effective techniques to evaluate current and prospective schedules. We introduced a new tool (Form E) that quantifies and depicts the manner in which a schedule relates to underlying coverage needs. We also identified considerations that are more qualitative in nature. Appendix J explores the nuts-and-bolts math and mechanics associated with developing and refining schedules, and provides some additional scheduling tools.

## **Creative Solutions to Consider**

### Manage Staff Time Off

- a. Examine the impact of current scheduling practices

At this point in the staffing analysis process it may be necessary to determine the impact of current scheduling practices on employee morale, job satisfaction, burnout, turnover, and absence. Finding the right balance in scheduling is difficult. For example, the allocation of weekend days off is usually a challenge: employees who have more tenure expect to have more weekend days off than newer employees, but the new employees find it hard to wait for years to earn a schedule that gives them one or more weekend day off.

When scheduling practices are out of balance, employee absences (especially unscheduled absences) will be much higher on weekend days, and often on Fridays and Mondays. One jail monitors employee absences very closely and identified marked differences-- mid-week days had half as many employee absences as did weekend days.

Schedules impact employees in many ways, and contribute to overall job satisfaction. In recent years 12-hour shifts have become increasingly popular in jails, for varied reasons.

But many jails who switched to 12 hour shifts were unpleasantly surprised by many unexpected difficulties that resulted from the change. Some found that they were required by employee contracts to increase the number of hours in a "day off" from 8 to 12.

Effective data collection and analysis, coupled with meaningful discussions with employees, will identify the extent to which current scheduling practices contribute to overtime difficulties.

## b. Plan and schedule leave better

Jail administrators have the authority, consistent with the terms of employee contracts, to establish procedures to govern the scheduling of staff leave. Some jurisdictions have found that carefully fashioned procedures can produce more even distribution of scheduled leave—by shift, by day, and by week. Procedures may also limit the number of staff who are allowed to schedule leave at the same time on each shift. But a balance must be found between the agency interest in controlling how many employees schedule leave at a given time and the employees' interest in taking their earned time when it best meets their needs.

One large jail system had a policy called the “five percent rule.” This prevented more than five percent of the employees assigned to any shift from scheduling time off. But the employee contracts provided for flexibility between personal leave (vacation) and sick leave, giving employees much more than five percent of their time off. When the five percent rule was enforced to prevent employees from *scheduling* time off in advance, the employees often found it necessary to call in sick at the last minute. In effect, the agency was creating a major problem with unscheduled absences with their well-intentioned policy that limited scheduled leave. The solution lies in conducting research into employee time off accruals and to develop new policies that allow employees to schedule time off.

Any changes in practices and policies must be carefully considered and should be based on research and common sense. Seeking staff input into potential changes and working closely with their collective bargaining representatives are essential.

The preceding narrative suggests only a few of the many dimensions of overtime use and causes that should be explored at this time in the staffing analysis process. Appendix F provides a case study that may be helpful. Additional overtime diagnostic tools are available as part of the toolkit that has been developed to supplement this workbook.

## Employ Creative Administrative and Management Practices

Scheduling employees, an ongoing challenge for most jail managers, offers potential for improved efficiency. This workbook makes it easier to develop and implement a schedule that closely corresponds to coverage needs. Many managers have found that using a variety of alternative work schedules, such as those described elsewhere in this workbook, can allow schedules to be tailored to the unique needs of each jail.

One large jail completed the coverage step of the staffing analysis process (Step 5) and discovered that demand for jail employees was fifteen percent lower on Saturday and Sunday. But their 12-hour shift configuration did not provide an opportunity to reduce staff deployment on weekends and concentrate additional employees on week days. Working with the employee union, managers polled employees and found that many would gladly volunteer for five 8-hour shifts that would provide them with weekends off every week. In this way, staffing levels were reduced on weekends and increased during weekdays, and employees were delighted with expanded scheduling choices.

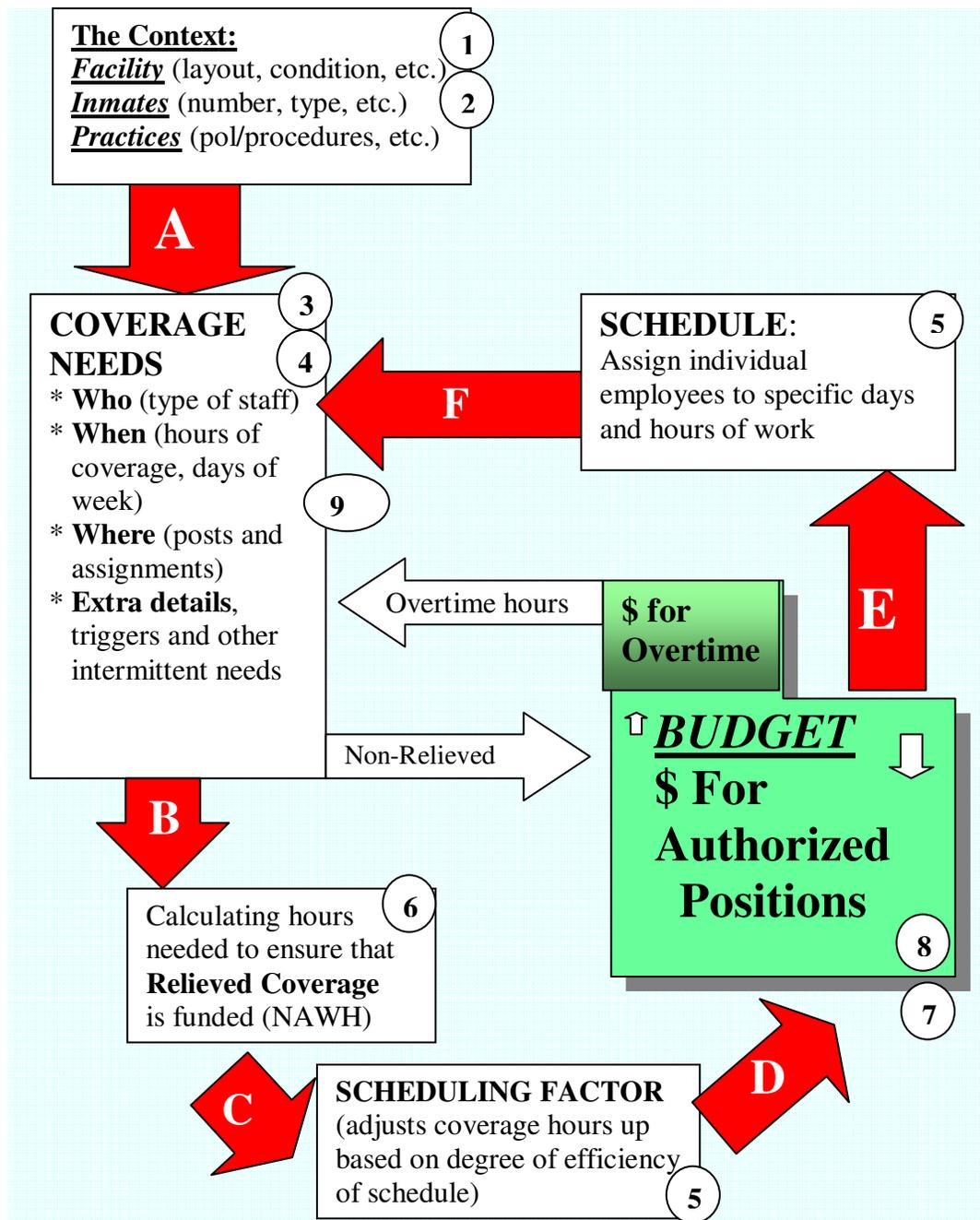
## Resources

Appendix J, More on Scheduling and Scheduling Tools  
Appendix K. Research on the Affects of Shift Work  
Sample staffing analysis report

**Step 6: Calculate Net Annual Work Hours (NAWH)**

The preceding steps have involved the analysis of all facets of the jail—physical plant, technology and operations. Step 6 describes a technical process that is essential for accurate budgeting. Figure II-16 illustrates the process by which operations are defined and budgets are drafted to meet operational needs. The corresponding steps of the staffing analysis process are shown in circles at the appropriate points.

**Figure II-16: From Operations to Budget**



In 1988, NIC introduced a new methodology that has been adopted in jails, prisons, fire departments, nursing homes, and other agencies that operate on a 24-hour basis. The NAWH methodology offers a more accurate and useful tool than its predecessor, the Shift Relief Factor (SRF). The NAWH calculations are applied before arrow B in the preceding illustration.

#### NAWH vs. Relief Factor

A "relief factor" attempts to answer the question: "How many full-time staff must I have in my budget to provide continuous coverage for a relieved post?" Relief factors are usually calculated for posts that are operated 24 hours daily, every day of the year. But calculating a relief factor becomes very difficult, and less likely to produce accurate findings, when a variety of posts are considered. Some posts operate for only part of the 24-hour day, and some posts are not operated every day of the week. Developing relief factors for the combinations of posts found in a creative and efficient modern jail is difficult and daunting.

One county recently concluded it only required 4.1 full-time positions to staff two 12-hour shifts, 365 days per year. They made math errors when they tried to adapt their old shift relief factor (for 8-hour shifts) to their new 12-hour shifts. In fact, they needed 5.48 full time positions. This is a common error made as managers try to apply relief factor methodology to alternative shift patterns.

The NAWH method introduced in the NIC Workbook accomplishes the same goals, more accurately, and with much more flexibility. By focusing on the "hour" as the unit to be measured, rather than a shift, the process has been improved. Although most steps in the staffing analysis process are more "art" than "science" the NAWH calculations demand attention to detail.

By calculating the "Net Annual Work Hours" (NAWH) for each classification of staff, the budget requirements for any number of operational practices may be easily--and accurately--estimated. A NAWH answers the question "How many hours is a typical officer (or other staff classification) available to be scheduled for duty in the jail annually?" The process for calculating NAWH is similar to the one that has traditionally been used for relief factors, but the product is much more useful and versatile.

Table II-8 shows how easy it is to use the NAWH method to identify budget requirements for a diverse set of posts and positions. Table II-8 demonstrates many advantages of the NAWH methodology. First, it highlights the fact that different classifications of staff have a distinct NAWH-- the COI and Sergeants in Lines 1 and 2 are needed to cover the same number of total annual hours, but because the sergeants have more time off for vacations and training, they have a lower NAWH. Therefore, more full time employees are required in the budget to cover the same number of hours in a year.

**Table II-8: Samples of NAWH Use for Variety of Posts and Positions**

<b>Post or Relieved Position</b>	<b>A Number of Hours Post is Operated Each Day</b>	<b>B Number of Days Post is Operated Each Week</b>	<b>C Number of Hours/Year Needed to Operate Post (A times B times 52.14* weeks in a year)</b>	<b>D Net Annual Work Hours for Classif. of Staff Used to Operate the Post</b>	<b>E Number of Full-Time Equivalent Staff Needed in Budget to Provide Coverage (C divided by D)</b>	<b>F Classification of Staff Assigned to Post</b>
1. Control Center	24	7	8,670	1,580	5.44	COI
2. Shift Supervisor	24	7	8,670	1,522	5.70	Sgt
3. Front Lobby Rec. Desk	16	7	5,840	1,580	3.70	COI
4. Intake Power Shift	10	2	1,043	1,580	0.67	COI
5. Escort and Relief	12	7	4,380	1,580	2.77	COI
6. Exercise / Recreation Officer	10	4	2,086	1,556	1.34	COII

\* There are 52 weeks and one day in a typical year, or 52.14 weeks. A leap year has one more day.

Using a NAWH makes it easy to calculate the budget implications of an infinite number of post assignment patterns and schedules. The hours per day and week may vary, but the NAWH is a common denominator to consistently determine budget needs. Imagine trying to calculate separate "relief factors" for the situations posted in Table II-8. Not only would it be very difficult, it would likely be less accurate.

#### Calculating NAWH

Form F provides a work sheet for the NAWH calculations; a completed sample is provided in Table II-9. Form F is available in paper form, or as an Excel file that automatically calculates NAWH values. The process for calculating NAWH involves five steps:

1. Determine the "total hours contracted annually" for each classification of employee. This is the number of hours an employee is actually *scheduled* to work. For example, a correctional officer working five, 8-hour shifts per week would be contracted for 2,086 hours annually (40 hours per week times 52.14 weeks per year.) The number of contracted hours may be different for various shift configurations.
2. Identify *all* of the situations that take an employee away from their regular post. These will include time away from post for personal reasons (such as vacation and sick leave) and time away from post for institutional reasons (such as training, employee physicals).

3. Collect data for each of the categories that take employees away from their posts. Determine the total annual hours away for each category.
4. Divide the total annual hours away from the post for each category by the *full time equivalent* employees who worked during the year.<sup>13</sup>
5. Enter the findings into Form A and calculate NAWH for each classification of employee.

**Table II-9: Sample Form F, Net Annual Work Hours (NAWH) Work Sheet**

Projected Net Annual Work Hours FY 2005 (using average of data for 3 prior years)		A--MCDC	B--MCCF
		CO I-III & MCO Detention Center	CO I-III & MCO Correctional Facility
1	<b>TOTAL HOURS</b> contracted annually	<b>2,086</b>	<b>2,086</b>
<b>HOURS OFF</b>			
2	Average Vacation Hours	112	150
3	Average Compensatory Hours	26	32
4	Average Sick Leave Hrs (projected, recent experience)	92	92
5A	Projected Training Hours training <i>received</i>	53	52
5B	Average Trainer Hours (staff <i>servng as</i> trainers)	5	5
6	Personal Leave Hours (CLE, PER)	30	30
7	Average Military Hours (Active)	27	36
8	Average Medical Exam Hours	3	3
9	Admin Leave 2 (AD2) Union Business	0	2
10A	Admin Leave 5 (AD5) Uncontested Temp. Disability	4	10
10B	Average Disability Hours (DAL)	40	40
11	Administrative (AML) incl. Court, bereavement, military (reserve)	18	22
12	Leave W/Out Pay (LWOP)	6	6
13	Holidays	80	80
14	<b>TOTAL HOURS OFF-POST per employee per year</b>	<b>496</b>	<b>560</b>
<b>NET ANNUAL WORK HOURS</b>			
15	(Line 1 minus Line 14)	<b>1590</b>	<b>1526</b>

NAWH calculations are projections for the next budget year. The calculations should be based on the analysis of three years of prior experience to improve accuracy. Although prior year experience is important, adjusting projected figures based on changes that are expected or desired is an acceptable practice.

When analyzing training, projections should be based on actual training delivered. But again, it is acceptable to adjust this figure for the coming year to reflect changes that are expected or

<sup>13</sup> The denominator is not the number of individual employees who worked that year, but rather the total number of days or weeks worked by all employees, translated into full time equivalents.

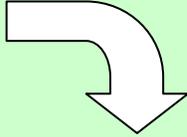
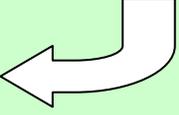
desired. One jail administrator proposed increasing employee in-service training by ten hours in the coming year. To ensure sufficient budget resources for this change the administrator added ten hours to the calculations that were based on prior experience.

*Worth the Effort.* Calculating accurate Net Annual Work Hours pays off in many ways. Doing it right demands a lot of time and attention to detail, but the results are worth it and will be realized year after year.

### Understanding the Difference Between Scheduled and Deployed Employees

Figure II-17 describes eight steps that take budget dollars and eventually deploy employees.

**Figure II-17: From Budget to Deployment-- The Major Steps**

<b>1</b>	<b>Budget Is Approved- FUNDS PROVIDED FOR EMPLOYEE HOURS.</b> Funds are provided to pay for employee hours, as salaries and associated benefits, overtime hours, and part-time hours.	 <p>Some dollars used to purchase overtime hours and (in some agencies) part-time hours.</p>
<b>2</b>	<b>Employees Are HIRED/RETAINED.</b> Recruiting, screening and selection, training, and retention all contribute to the total cost of the hours that salaried employees work. <b>Employee regular hours available for deployment are calculated using the Net Annual Work Hours (NAWH) figures.</b>	
<b>3</b>	<b>Employees Are ASSIGNED TO TEAMS (Squads/Groups) for the Purpose of Scheduling.</b>	
<b>4</b>	<b>Employees Are SCHEDULED TO WORK Regular Hours On Shifts. Regular Days Off (RDO) Are Determined.</b>	
<b>5</b>	<b>Some Employees SCHEDULE ABSENCES.</b> Receive approval ahead of time for vacation, planned medical procedures, and other types of paid time off from work that may be anticipated and planned in advance.	<p><b>Overtime and/or Part-Time Funds Are Used to Fill Deployment Vacancies</b></p> 
<b>6</b>	<b>Some Employees Fail to Appear for Scheduled Shift Due to UNSCHEDULED ABSENCES.</b> Employees call in sick, have family emergencies, and take other time off with pay without scheduling the time off in advance.	
<b>7</b>	<b>The Remaining Employees REPORT AS SCHEDULED for Work and Are DEPLOYED.</b> Sometimes there are shortfalls, sometimes excesses.	
<b>8</b>	<b>ADDITIONAL EMPLOYEES (part or full-time) ARE CALLED IN (As Needed) to Insure Minimum Staffing Needs Are Met.</b>	

Working with jails throughout the United States, we have identified common mistakes that are made at *each step* of the process. Some of these are described in the following narrative.

## Common Mistakes Made at Each Step of the Process

### **1. Budget Is Approved- FUNDS PROVIDED FOR EMPLOYEE HOURS.**

- Not enough funds requested (many potential causes).
- Too much money allocated for full-time employees leaving little for overtime/part-time hours.

### **2. Employees Are HIRED/RETAINED.**

- Hiring too many full-time employees compared to hourly employee hours.
- Not accounting for turnover.
- Missing opportunities to increase employee retention.

### **3. Employees Are ASSIGNED TO TEAMS (Squads or Teams) for the Purpose of Scheduling.**

- Dividing total employee cadre into too many units, decreasing scheduling flexibility, and efficiency.
- Assigning too many employees to a squad compared to net coverage needs- creating frequent excess deployment.
- Assigning too many new employees to the same team or squad.
- Not managing vacancies to spread them out equally among all teams.

### **4. Employees Are SCHEDULED TO WORK Regular Hours On Shifts. Regular Days Off (RDO) Are Determined.**

- *Inefficient* scheduling (e.g. not using data to adjust for days of the week that employees are differentially absent, not distributing shifts evenly, not distributing shifts to correspond to varied needs by day of the week).
- *Unfair* scheduling (e.g. favoritism, too much deference to veteran employees) that results in low employee morale and higher turnover.
- Too many persons involved with scheduling (causes inconsistencies).
- Person(s) involved with scheduling not properly trained for the task.

### **5. Employees SCHEDULE ABSENCES.**

- Ineffective policies that govern employee absence scheduling.
- Unfair policies regarding scheduling of absences.
- Lack of incentives (or penalties) for using less time off.
- Unrealistic limits on the proportion of scheduled absences, making it impossible for some employees to schedule all hours to which they are contractually entitled.
- Inaccurate recording and communication of scheduled time off.

### **6. Employees Fail to Appear for Scheduled Shift Due to UNSCHEDULED ABSENCES.**

- Lack of effective policies to reduce the frequency of unscheduled absences.
- Lack of incentives (or penalties) for reducing unscheduled time off.

## **7. Employees REPORT AS SCHEDULED for Work and Are DEPLOYED.**

- Too many employees report and are not assigned to posts or details that are funded in the budget.
- Too few employees report causing serious shortfalls.
- In larger jails, or in jails that divide into many teams, excess employees on one team not “shared” to meet shortfalls on another team (and/or specialization inhibits the sharing of employees).

## **8. ADDITIONAL EMPLOYEES ARE CALLED IN (As Needed) to Ensure Minimum Staffing Needs Are Met.**

- Too much overtime has already strained employees, causing morale and performance problems.
- Unfair and/or inconsistent practices that offer overtime to employees.
- Mandatory overtime causes morale and performance problems for some employees.

When the number of employees who actually present themselves for a shift is below the level needed to ensure safety and security, various responses address the shortfall (bringing in employees on overtime, using part-time employees, holding employees over for another shift, reducing operations to adjust to the shortfall). But when *more* employees report, it is possible to waste costly staff hours.

### A Case Study

Before trying the NAWH methodology, the Montgomery County (MD) Department of Correction and Rehabilitation (MCDOCR) had calculated a "relief factor" for staff assigned to relieved posts. The NIC methodology offered a new and promising methodology, the Net Annual Work Hour (NAWH), and Montgomery County decided to try it to evaluate their staffing levels and to prepare for their FY2006 budget request. In 2004, Montgomery County opened a new state-of-the-art correctional facility and continued to operate its older Detention Center. With a projected staff compliment of 282 correctional officers in FY2006, it was essential to calculate budget needs accurately.

As it turned out, the differences between the old methodology used by the MCDOCR (relief factor) and the new NAWH calculations were significant. The relief factor used for the FY2005 budget analysis turned out to be nearly ten percent *lower* than the NAWH calculated for the initial budget submission. If the MCDOCR had continued to use the old methodology, it would have continued to struggle with an ongoing overtime problem that was largely driven by the budget shortfall caused by the earlier shift relief calculations. The County found that it entered the fiscal year nearly 30 full-time-equivalent officers short simply because of the math. NAWH demonstrated the *real* number of hours a typical staff member was available to be assigned to a post each year.

Using the NAWH methodology, Montgomery County found that, for every three hours a typical correctional officer works, he/she receives an hour of paid time away from their primary post. This is not unusual for a jail in the United States, but each facility has its own

unique combination of reasons that take jail staff away from their posts with pay (vacation, sick time, training, military leave and *much* more).

Why must the NAWH estimate be accurate? Because failing to accurately estimate NAWH inevitably results in budget shortfalls, usually in the form of unexpected overtime. Even worse, budget shortfalls might cause an agency to leave posts vacant, posing serious safety and liability concerns.

DOCR officials explained the importance of the NAWH calculations to other county officials. They stressed that the NAWH estimate is a crucial budgeting tool that helps to distinguish between *gross* staff hours budgeted and the *net* hours that are actually available to be scheduled for daily MCDOCR operations. As a result, subsequent budgets were adjusted to add nearly 10% more staff-- not to increase deployment in the jail, but to provide sufficient funds (for the first time) to pay for the staffing practices that had already been adopted.

Insufficient budget allocations create serious challenges for MCDOCR officials. The County's policy requires all posts and positions in the MCDOCR daily staffing plan to be filled, which chronically caused expenditures to exceed budget allocations, usually in the form of unexpected levels of overtime.

When budget estimates are inaccurate (in other words, too low), the County has to draw on staff overtime or part-time staff to make up the shortfall. Montgomery County does not use any part-time staff, which means that all shortfalls must be satisfied by overtime. Extensive use of overtime is not only expensive, but excessive *mandatory* overtime negatively impacts the organization.

Excessive overtime creates performance problems for staff who work long hours, increased use of sick leave when employees try to manage their personal lives, added overtime that is needed to compensate for growth in sick leave, and disciplinary actions that absorb the time of the employee, the supervisor, and management. Excess mandatory overtime also undermines the reputation of the Department within the ranks and generates widespread morale problems.

#### Using the Worksheet to Calculate NAWH

Form F provides a template for calculating NAWH. Montgomery County used this as a starting point. Table II-11 describes each of the factors that Montgomery County found to cause a staff member to be away from their post with pay, including various forms of paid leave (vacation, sick, holidays) and other activities that make them unavailable to report to their posts (such as certain types of training).

**Table II-11: Categories of "Time Off" Used by Montgomery County**

<b>Time Off Category Used in NAWH Calculations for FY 2005</b>	<b>Source and Methodology</b>
Vacation Hours	actual hours used based on past experience
Average Compensatory Hours	actual hours used based on past experience
Average Sick Leave Hrs (projected, recent experience)	actual hours used based on past experience
Projected Training Hours (see notes) training <i>received</i>	projected, based on anticipated turnover and changes in training practices
Average Trainer Hours (staff <i>servicing as trainers</i> )	actual hours used based on past experience
Personal Leave Hours (CLE, PER)	actual hours used based on past experience
Average Military Hours (Active)	actual hours used based on past experience
Average Medical Exam Hours	projected based on contractual requirements
Admin 2 (AD2) Union Business	actual hours used based on past experience
Admin 5 (AD5) Uncontested Temp. Disability	actual hours used based on past experience
Average Disability Hours (DAL)	actual hours used based on past experience
Administrative (AML) incl. Court, bereavement, military (reserve)	actual hours used based on past experience
Leave W/Out Pay (LWOP)	actual hours used based on past experience
Holidays	based on contractual requirements
<b>CONSIDERED BUT NOT USED by Montgomery County</b>	
Breaks	Not used for NAWH calculation because this activity is addressed in the staffing and coverage plan
Time to Fill Vacancies (Vacancy Rate)	Not used because this is addressed in the annual budget in a different way

There are two basic methods for estimating a figure for each element of the NAWH calculation:

- \* Actual experience, in past years, preferably using several years of data to identify trends and patterns. Example: average amount of vacation time actually used per year was calculated by adding all vacation time taken by full time staff in a classification, and dividing the total hours by the number of staff. In accounting terms, this would be a "cash" basis of analyzing data-- hours are counted only when they are actually used, not when they are earned.

\* Accrued (entitlement) in the coming year. This approach identifies the amount of time off that is specified in employee contracts and personnel policies. In accounting terms, this would be an "accrual" method-- hours are counted when they are *earned*, regardless of when they are actually *used*. Although this method is used less often, it is sometimes favored by budget officials. This method will produce a different (usually higher) product than the other method.

Two techniques are used to *refine* the estimates:

- \* Projecting (anticipating) the impact of new practices for which no data are available. This technique looks ahead to the next year and predicts changes in the context. This is often necessary when there are changes in laws or policies. For example, it was necessary to project the impact of the Family Medical Leave Act for the year after it was enacted. Changes must also be projected when a new employee contract becomes effective.
- \* Adjusting figures based on expected or desired changes in the coming year. This technique examines past practices and entitlements and makes deliberate adjustments for the coming year. For example, if an employee contract is being negotiated in the coming year, an adjustment might be made to predict an *expected* change in entitlements. If the agency launches an initiative to reduce staff use of sick leave, for example, the NAWH would be adjusted to reflect the impact of this *desired* change.

One technique frequently used in this process is the "weighted average." An example of a weighted average may be found in the analysis of training hours. The amount of training provided to newly-hired MCDOCR Correctional Officers is substantially higher than training provided to staff after their first year of employment.

A weighted average for training identifies the amount of training for first-year officers and multiplies it by the number of staff expected to be in their first year in FY 2006. This figure would be combined with the total hours for officers who have been employed for more than one year, and the grand total would be divided by the total number of staff.

This is depicted in the formula below.

$$\text{Average Training Hours} = [(O_1 \text{ times } T_1) + (O_2 \text{ times } T_2)] \div (O_1 + O_2)$$

*Where--*

O<sub>1</sub> = Number of Officers expected to be in their first year of employment

T<sub>1</sub> = Number of hours of training for each new officer

O<sub>2</sub> = Number of Officers expected in their second or higher year of employment

T<sub>2</sub> = Number of hours of training for each officer in their second or higher year

Montgomery County's findings for correctional officers in each facility were shown in Table II-10 at the beginning of this section. Other classifications of staff were also examined by the MCDOCR but are not shown on this sample.

Montgomery County used the new staffing analysis methodology to produce a more accurate budget request. In the process they explained chronic staffing shortfalls that had troubled the County for years. Based on their experience with the new Net Annual Work Hours methodology, the County is now applying other new staffing analysis techniques to its operations.

### Everything Goes *Somewhere* and Nothing is Too Small

The NAWH calculations will address many different aspects of employee contracts, policies and facility operations. As you assemble the data and information needed for this step, be careful not to exclude seemingly “small” items. They add up and must be included in the analysis.

Also, do not discard anything that does not seem to fit in this step. Everything needs to go somewhere, and if it does not fit here, it should be considered in another step.

Employee breaks are a good example. These may not seem to be a large enough issue to include in the staffing analysis. They are. Breaks may not fit well into the NAWH calculations (the authors recommend addressing breaks in coverage). Be sure not to lose any detail just because it does not fit in the current step. Carry it over into another part of the process and be sure it is considered. The small pieces add up, and the stray elements combine to improve the accuracy of the work.

### Summary

The NAWH findings will not be used until Step 8 (prepare a budget). But experience suggests that calculating NAWH the first time may take a great deal of time and effort. Therefore, we introduce this step very early in the process, hoping to ensure it is completed when it is needed. Appendix C explores NAWH in more detail. Other resources in the toolkit that supplements this workbook may also prove helpful.

## **Creative Solutions to Consider**

### Manage Staff Time Off and Overtime

Step 6 of the process focuses on the math associated with operating relieved posts and positions. The NAWH methodology identifies dozens of situations that keep employees from reporting to work, or from working their usual posts if they do report to work. Staff time off-- sick time, vacation, other types of leave-- represents the largest component of employee time away from posts. Much of the overtime required to backfill posts when regular employees are not available is caused by staff time off.

Overtime practices affect employees in a variety of ways. In balance, and when not mandatory, opportunities to work overtime hours are appreciated by employees. However, overtime can lead to a vicious cycle. Employees who are required, or choose to work an excessive amount of overtime often experience many negative effects such as a decline in performance, health problems, and a reduction in job satisfaction. This, in turn, may lead to increased employee turnover, which has a negative impact on NAWH as the newly created vacancy must be filled

with overtime. If the turnover continues to escalate, the jail will gradually be operated by a less experienced work-force.

There are many incentives for jail managers and other stakeholders to improve their efforts to manage employee time off. Ideas are offered in the following subcategories:

- a. Managing sick leave
- b. Managing overtime
- c. Reducing compensatory time off
- d. Minimizing specialized posts
- e. Distribute regular days offer more evenly
- f. Plan and schedule leave better
- g. Minimize unfunded posts

Two of these, a and b, are applicable to this step of the process. These represent a starting point, but should not limit creative approaches.

- a. Managing sick leave

When employees call in sick, administrators scramble to find staff to cover shifts and often need to approve overtime-- or worse, leave posts vacant. By definition, sick time is usually difficult to predict, but close monitoring of sick leave practices and patterns may yield information that will help to anticipate needs and, in some instances, to identify specific staff members who present special challenges.

Some sick leave may be scheduled in advance, such as appointments or scheduled procedures. St. Louis County, Missouri, records whether employee time off is scheduled or unscheduled and rewards employees who have low levels of unscheduled time away from their posts.

Documenting sick leave activities builds an important foundation for analysis and informed action. In addition to simply logging the times that employees are out sick, it may be helpful to document additional information, whether notice is given and if so, how much was provided.

Some jurisdictions have found that the use of sick leave is substantially reduced when employees have incentives not to use sick time. Usually this involves offering compensation for all, or part, of any sick time that is not used, or giving more personal leave. Because some employees view sick time as a benefit to which they are entitled, they may call sick when in fact they are just trying to "use it or lose it." Providing other alternatives may significantly reduce the scheduling problems caused by sick leave.

Some agencies provide cash incentives to employees who do not use more than a specified number of sick days. The rationale is that a reduction in sick time will reduce overtime, and therefore pay for itself, with the added bonus of less staff being asked to work double shifts.

Supervisors may help subordinates to reduce the use of sick time by trying to accommodate a temporary absence from a shift for a medical appointment. When an employee's request for an hour off to visit the doctor is refused, it is likely that he or she will call in sick for the full shift the next time there is an appointment.

## **b. Managing overtime**

When full-time employees are asked to work beyond their regularly scheduled workweek, overtime costs are incurred. These costs represent at least a 50-percent premium above the base pay levels of staff—in the form of either a higher wage paid as overtime or an increased amount of paid time off (compensatory time). The next section explores the hidden costs of compensatory time, while overtime is examined here. Appendix F provides a case study of the effective use of staffing analysis techniques to understand and solve overtime problems. Often the solutions will be elusive or ineffective until the causes are clearly defined.

First, a few important understandings about overtime:

- Some overtime will always be needed to run any operation that has relieved posts and positions.
- All overtime is not the same.
- Analyzing and controlling overtime cannot be accomplished without good data.
- Not all overtime is bad; in fact, overtime, in balance, is a very efficient response to certain needs.
- The goal should be to balance overtime requirements.

In some jails, employees routinely work overtime. Some employees rely on the extra income it generates. For the jail budget, however, *unexpected* overtime can be a disaster. It is inevitable that some overtime will be required to operate the jail, but there are ways to regain control of the amount of overtime incurred, and to accurately predict future overtime needs.

The starting point for any effort to better manage overtime is collecting and analyzing data about current practices. Information about the circumstances that prompted some overtime demands may be sketchy or even nonexistent, requiring implementation of better overtime reporting practices. Without solid data about the circumstances that prompted the need for overtime and the steps that were taken to explore alternatives, efforts to improve overtime management will be frustrated.

In most cases, the decision to incur an overtime cost requires the specific authorization of a supervisory or administrative staff member. Individual staff members rarely have the authority to authorize themselves to incur overtime costs. This offers a point of inquiry and intervention for jail managers.

Examine practices regarding the authorization of staff overtime.

- Who is authorized to make the decision?
- What steps (if any) are they required to take before authorizing overtime?
- What alternatives (if any) must be considered?
- What justification is required?
- Which employees are using the most overtime?
- Which posts or positions typically require overtime?

Review each of these practices and consider tightening up the process. Perhaps fewer persons should be authorized to make overtime decisions, or a list of specific alternatives should be exhausted before overtime is authorized. At the very least, clear and more compelling justification

for overtime may be warranted.

As you analyze overtime practices, you may identify clear patterns, such as circumstances under which overtime is frequently incurred. Take the following steps to accomplish this:

1. List the situations that most often result in the use of overtime.
2. List specific alternatives that should be considered instead of using overtime. These might include establishing a policy on critical staffing levels, below which staffing levels may not fall. It may turn out that not every position or post of every shift is critical enough to warrant overtime, but this decision should be set by policy, not left to discretion.
3. Rather than assuming that the jail will continue to operate without changes, consider whether certain non-critical activities may be deferred or suspended in response to temporary staff shortfalls.
4. Instead of automatically filling a vacant staff position on a shift, consider whether jail operations can safely and appropriately be adjusted instead.

As you sharpen your analytical skills, you can even develop a matrix or decision tree that anticipates the majority of overtime situations and identifies specific alternatives to be explored before authorizing overtime.

#### Some Examples

One large urban jail that has chronic difficulty filling authorized vacancies has established a procedure for adjusting shift operations in response to the number of officers who actually report. The adjustments include curtailing some programs and activities. Another direct supervision jail responds to shortfalls *during* a shift by locking inmates into their cells for a few hours, freeing the officer to help with other tasks in the jail.<sup>14</sup>

#### c. Reduce compensatory time

Some jurisdictions do not allow employees the option of accruing compensatory time instead of receiving overtime pay. Jurisdictions that do allow compensatory time often place strict limits on the amount that may be accrued by an employee, but some do not restrict the practice.

Compensatory time has a multiplying effect that, left unchecked, may become very expensive. Instead of paying an employee for 50% more hours as overtime, allowing them to accrue 50% more hours of time off raises the possibility that compensatory time will be used once again, exacerbating the shortfall of hours and increasing overall costs. An eight hour shift taken as compensatory time entitles the employee to take 12 hours of paid time off in the future. If this 12 hours is worked by an employee that takes compensatory time, he/she will be entitled to 18 hours of paid time off in the future.

Without effective controls, the use of compensatory time will become a difficult and expensive burden. An example of some controls that can be put in place would be to limit the number of individuals able to be off work on scheduled leave, and couple that with an “expiration date” of the compensatory time that leads to individuals being paid when that date arrives.

---

<sup>14</sup> Jail administrators worry that if this practice occurs too often the effectiveness of direct supervision will be severely diminished.

In some jurisdictions, when an employees leave the agency they are paid for their unused accrued compensatory, vacation and sick time. If these hours are allowed to accumulate freely an employee might be attempted to leave the agency in order to receive the windfall payment for the unused time off.

### Improve Staff Hiring and Retention Practices

Perhaps the most frustrating staffing problems that confront jails result not from budget restrictions, but from difficulties keeping authorized positions filled. Many jails routinely experience vacancies in authorized staff positions, most frequently with entry-level staff. Maintaining a full staff complement is usually frustrated by varying rates of staff turnover. It is particularly maddening to have invested the time and money to make an employee ready to be deployed in the jail, only to have that person soon leave the position. The working conditions of jails certainly contribute to staff turnover, but many jails have found ways to drastically reduce turnover, often without increasing staffing costs.

Many strategies have been found effective in reducing staff turnover:

- Improving recruiting practices.
- Matching employee skills to specific jobs.
- Increasing pay.
- Enhancing benefits.
- Providing opportunities for promotion.
- Recognizing staff.
- Providing employees with meaningful input into agency policies and procedures.
- Implementing staff training and development programs.
- Providing employee assistance programs.

In 2008 the Bureau of Justice Assistance (BJA) commissioned a broad-ranging analysis of jail recruiting and retention issues.<sup>15</sup> The project included a national survey of line staff and administrators, uncovering many contrasts between administrators' assumptions and employees' opinions. The full range of products from the BJA project are available through BJA; several are included in the staffing analysis toolkit that supplements this workbook.

Some jails have had success with efforts to keep all authorized staff positions filled. Finding prospective employees who may eventually be hired and deployed is a lengthy and often expensive process. It may be possible to shorten the time it takes to process applicants. Some jurisdictions have analyzed their past hiring and turnover experiences and adjusted their recruiting practices. In effect, they set out to find substantially more staff than they are funded to hire, knowing from experience that a certain percentage will not make it through the process. This is not unlike airline practices of overbooking flights.

### Resources

Appendix C, More on Net Annual Work Hours

Appendix F, Using the Staffing Analysis Methodology to Analyze Overtime

Sample staffing analysis reports from other jurisdictions.

---

<sup>15</sup> The Future is Now: Recruiting and Retaining, and Developing the 21st Century Jail Workforce. [www.cipp.org](http://www.cipp.org).

## **STEP 7. Prepare a Budget**

*The budget director for a large urban jail system received an urgent call from the city/county budget office. The request seemed daunting: draw a straight line between the jail personnel budget and the actual hours worked on the jail floors. Less than 2 hours later the information had been assembled because NIC had trained officials in the staffing analysis process and they had followed the process.*

The process described up to this point in the methodology provides the foundation for clearly understanding where hours will be worked, when, by whom, and for what purpose. This step of the process must ensure that none of the detail is lost as findings are translated into a budget.

Staffing costs usually represent seventy percent or more of a jail's overall operating budget. Over a 30 year life cycle for a new jail, facility construction and finance costs will total only ten percent while staffing costs will comprise an average more than sixty percent. It is essential that staffing decisions are made carefully—this methodology provides decision-makers with everything they need to make informed decisions. It is essential that budget calculations be thorough and accurate—this methodology provides more detail and accountability than any other.

Every jurisdiction has its own practices and protocols for developing budgets. This workbook cannot anticipate all of the variations that are found in the field. Rather, this step shows how the hard and detailed work completed up to this point is used to inform the budget-setting process.

Table II-12 describes the linkages between specific steps in the process and the development of an accurate and defensible budget.

### Nominal Vacancies vs. Functional Vacancies

*During a command staff meeting at a jail the budget/human resource director proudly announced that every jail officer position was filled. The operations manager responded that she was 17 officers short on the floor. They were both right.*

One of the most difficult challenges for managers and budget officials is to reach agreement on the status of vacancies. From the budget and human resources (HR) perspective, a vacancy is filled when an employee is hired and begins drawing pay. But in the case study cited above, it takes at least six months for a newly hired jail officer to be ready for deployment in the jail. In this case, the number of officers who are “in the pipeline” represented 17 positions. The operations manager had 17 slots in the employee schedule that correctly read “vacant.”

Both officials were correct. There were no vacancies available to be filled by HR (nominal vacancies) but there were many “functional” vacancies on the floor.

**Table II-12: Using the Staffing Analysis Process to Inform the Budget**

<b>Step</b>	<b>Product</b>	<b>Use in Budget</b>	<b>Comments</b>
3. NAWH	NAWH for each classification of employee.	Calculate FTEs for each classification using coverage figures.	NAWH breakdown may identify areas to be researched
5. Coverage Plan	a. Relieved coverage plan	<ul style="list-style-type: none"> <li>• Determine FTEs by dividing coverage hours for each classification by corresponding NAWH</li> <li>• Estimate overtime hours that will be needed to backfill scheduled and unscheduled absences</li> </ul>	It will be necessary to determine how many relieved coverage hours will be filled by employees working regular hours, and how many will be filled by overtime, comp time and part-time.
	b. Non-relieved needs	Add FTEs for non-relieved.	All will be positions in the budget, 1 for 1 basis
	c. Details	Add hours to be funded with overtime, comp time or part time	Balance total hours to be met with overtime, comp and part-time
7. Schedule	Schedule efficiency calculation(s)	Apply the scheduling efficiency factor to coverage hours for 5(a) relieved coverage needs	Note that some regular hours will be used when not needed in the coverage plan.
Taken together, this process connects every hour worked in the facility directly with the budget. Any interested official will be able to determine exactly where the budget dollars are going in the jail.			

One of the potential solutions to this dilemma is to create an additional classification of employee for officers who are in the process of being prepared to work on their own, but who are not yet ready. Jurisdictions that use this approach find it easier to explain the budget to officials and easier to track vacancies.

Appendix F provides a case study that illustrates the value of this staffing analysis process to solve budget-related problems.

If the NIC methodology is fully applied, the resulting budget request will be accurate and defensible. It will draw a straight line between operations and the budget.

## **Creative Solutions to Consider**

Be cautious about creating “unfunded” posts or positions

Jail administrators sometimes find it necessary to create new posts or positions that have not been funded in the operating budget. These might range from staffing a new program in the middle of a budget cycle to assigning a staff person to coordinate early releases. Other assignments include providing special training, conducting research and planning, monitoring a new construction project, or working on a transition team. Sometimes the post is a temporary one, such as assigning an officer to supervise an inmate housed in a hospital. Such temporary intermittent “details” are addressed in Step 5 as part of the coverage plan. But any *ongoing* post or position that has not been anticipated in the budget will create a strain on the organization and its employees.

## **Resources**

Sample reports from other jurisdictions

## **STEP 8. Prepare a Report**

The staffing analysis report will have a varied audience and needs to address a variety of needs. The organization, format and style of the report should respond to the audience for which it is intended. In some cases, more than one version of the report might be needed. Some audiences want to see only the bottom line (how much will it cost?). Others want to examine all of the decisions and calculations.

The report might also have some unintended audiences, such as plaintiffs in lawsuits against the jail. Jail staffing analysis reports and related documents are often sought by plaintiffs during discovery. It is important to remember this audience when writing the report.

A report must be developed that justifies all aspects of the proposed staffing plan. The report should be easy to follow and include all of the completed forms (usually as appendices or attachments), along with a narrative explanation of their meaning. Assemble a complete copy of all final materials, in successive order. Providing too little detail is usually a mistake. Even if some decision-makers are not interested in the nuts and bolts, it is important to provide an indication of the comprehensive process used to develop the staffing plan.

The outline in Figure II-17 provides one of many approaches to organizing a comprehensive staffing analysis report.

### **Figure II-17: Sample Table of Contents**

- Letter of Transmittal
- Executive Summary
- Table of Contents
- I. Introduction
  - A. Purpose of Report
  - B. Reasons for Conducting Analysis
- II. Staffing Analysis Methodology
  - A. Jail Characteristics and Issues
  - B. Staffing Analysis Concepts
  - C. Major Staffing Issues Explored
- III. Summary of Findings
  - A. Description of Setting [Include trends in average daily population, length of stay, and admissions.]
  - B. Activities
  - C. Coverage Plan
  - D. Staff Coverage Plan's Impact on Identified Issues
  - E. Staffing Needs
  - F. Net Annual Work Hours (NAWH)
  - G. Operational Costs
- IV. Recommendations and Implementation Plan
  - A. Recommendations
  - B. Implementing the Staffing Plan
- Appendices

Assembling this report should be easy because it draws from the work and forms that have already been completed. Adapt the outline as needed to meet the needs of the audience for your report. Additional materials, such as data collection sheets, may be attached as appendixes as needed.

Figure II-18 provides another sample outline, including identification of the appendixes.

### **Figure II-18: Sample Report Organization**

#### EXECUTIVE SUMMARY

- I. Introduction
- II. Methodology
- III. Summary of Findings
  - Step 1: The Setting
  - Step 2: Activities
  - Step 3: Coverage Plan
  - Step 4: Evaluation of Coverage Plan
  - Step 5: Scheduling
  - Step 6: Net Annual Work Hours

#### IV. Budget Implications

#### V. Recommendations

#### *APPENDICES*

- Appendix A: Draft Activities Table and Coverage Plan
- Appendix B: Location of Relieved Posts and Positions
- Appendix C: Employee Hours
- Appendix D: Required State Staffing Analysis Form

Figure II-19 describes the appendixes used in another jurisdiction, providing many of the actual forms and detailed findings for reference.

### **Figure II-19: Sample Appendixes**

- A. Profile of the Physical and Operational Context
- B. Annotated Facility Floor Plans
- C. Analysis of Movement Between City Hall and PSF
- D. Net Annual Work Hours (NAWH) Calculations
- E. Activity Tables and Graphs
- F. Task Identification and Frequency
- G. Samples of Activity Data Collection
- H. Coverage Plan

The toolkit that supplements this workbook provides many completed staffing analysis reports which may be used as case studies. Look at these and identify strategies and elements that seem interesting and appropriate, then organize a report that makes the most sense in your context.

### **Resources**

Sample reports from other jurisdictions.

## **STEP 9: Implement the Plan and Monitor the Results**

Implementation will be much easier if employees are involved in the analysis. Employees should be fully aware of the changes and the underlying reasons for them before changes are implemented. Once implemented, the staffing plan should be continuously monitored; it should be evaluated in approximately 6 months to determine its effectiveness.

When problems are identified, it may be necessary to revise the plan. When making revisions, remember that the process that produced the plan reflects the complexity of jail operations; carefully assess the impact of any proposed change on the rest of the plan.

Revising the staffing analysis and plan will also be necessary when significant changes occur in the context of the jail (physical plant, population levels, employee contracts, etc.). Revisions may be made efficiently by using the initial analysis. Before changing staff assignments and scheduling, review relevant employee contracts to ensure that the changes do not violate any provisions. If problems arise, a cooperative effort should resolve them.

Review the plan periodically. Conduct a thorough review and update NAWH calculations annually (at least) to correspond with the budgeting cycle of the facility.

Several implementation elements are described below.

### **A. Overall Implementation**

The first and most obvious monitoring effort requires taking a close look at the actual staffing of the facility after the plan was implemented:

- Is each shift being filled as planned?
- Are shifts being filled by appropriate personnel?
- Are you using more overtime or part-time staff than you anticipated?

### **B. How Do Employees View the Plan?**

Once you establish that the staffing plan is being implemented properly, consider whether you and your colleagues are satisfied with the outcomes:

- Are employees satisfied with the changes? (ask all levels of staff)
- Are there any unexpected consequences?
- Are employees satisfied with their assignment and schedule
- Are they able to perform tasks as assigned?
- Are enough employees provided?
- Are employees qualified for their duties?

### **C. Look at the Outcomes**

While employee perceptions are one important source of insights, it is also important to look for evidence of the plan's effectiveness. Many agencies identify and analyze specific "outcomes" that indicate how the organization is working.

These might include:

- Critical incidents (assaults, escapes, injuries, etc.)
- Inmate discipline
- Contraband
- Grievances
- Employee turnover
- Employee job satisfaction

The 4th Edition performance based standards published by the American Correctional Association (ACA) identify dozens of outcome measures that might be helpful.

#### D. Identify Potential Improvements

Consider how the plan could be further improved based on the experience during the first months. Be sure to be alert for unintended consequences.

After you identify potential problems and opportunities for further improvement, you should go back to the appropriate step(s) of the staffing analysis process and make necessary revisions. Be sure to document your activities in this area and to amend forms and narratives as needed.

Consider incorporating the preceding actions into your regular operations (through policy and procedures). An ongoing monitoring effort can benefit the jail organization in many ways.

#### E. What If You Are Not Provided with the Staffing Resources You Need?

*A shift supervisor in a 900-bed jail was unable to assemble enough employees to fill all needed posts and positions on a Sunday afternoon. During his shift, the jail operated with less than 15 employees, half of whom were tied to fixed secure control posts. The next day during a staffing analysis work session he told the team “I was really short on staff, but I got everything done—visiting, recreation—everything.” One of the team members then asked “But was it safe?” All agreed that it was not and that serious risks attach to understaffing.*

What if you are asked to operate the jail with fewer staffing resources than the staffing analysis concluded were necessary? In spite of the best efforts to analyze needs, find efficiencies and present budget needs, some agencies do not receive the budget resources that are needed to operate the jail *as planned in the staffing analysis*. Some jurisdictions have been allocated adequate funding but are unable to hire and retain sufficient staff to fill the funded positions.

Whatever the cause, when staffing resources fall short of what is needed to implement policies and procedures safely and to maintain security, it follows that operations should be amended or scaled back to match the available staffing level. Many managers have made contingency plans that specify, in advance, the order in which specific activities, services and programs are suspended in response to understaffing.

One jail has a procedure for “rolling lockdowns” that lock inmates in their cells in direct supervision housing units during the day when the housing unit officer is needed to assist with transports. Although the lockdowns are imposed on different housing units during the week, officials worry that they are approaching the point at which their ability to maintain a direct supervision setting will be compromised. They wonder how far their can go before the system stalls and fails to provide the safety and security that is sought.

Another jail that has chronic problems filling budgeted positions has a matrix of actions to be taken in response to varied amounts of staff shortages on a shift. The plan suspends some activities, such as exercise, and many programs in order to maintain a safe and secure jail. Managers are not happy about the situation, but have concluded that their primary responsibility is to ensure the safety and security of their employees, inmates and the public.

Jail inspectors from three states were asked to consider this issue and to identify their suggested responses. After lengthy discussion and debate, they concluded that reducing and amending operations to maintain safety and security would be necessary at times. Although suspending some programs, activities and services will violate some of the mandatory state standards, the inspectors acknowledged that safety and security was the highest priority. They also insisted that lack of sufficient staffing would not be accepted as an excuse for noncompliance, and that their inspection reports would note the deficiencies that are caused by staff shortages.

Jail managers and personnel are often placed in a position that holds them responsible for maintaining safety and security, complying with standards, and implementing policies and procedures, without being given the tools to do so. The staffing analysis process, done properly, provides decision-makers with the credible information needed to justify budget requests. Managers are responsible for identifying needs and seeking necessary resources. When resources are not sufficiently allocated, the officials in charge of the budget share the liability for problems that might occur in the jail.

The staffing analysis methods and tools may also be used to identify appropriate responses to staff shortages. For example, the coverage plan could be revisited to identify changes in operations that are appropriate for available staffing resources.

## Glossary

**Coverage Plan.** The description of the *minimum* numbers and types of staff needed to operate the facility at each hour of each day in the week.

**Cycle.** The number of consecutive days needed to reach the point at which the schedule repeats itself.

**Deployment Plan.** A description of the posts to be filled, the hours and days they will be filled, and the classification of staff to be assigned. This should not be confused with a schedule; employees who are scheduled to work often fail to report. The deployment plan describes the net posts to be filled.

**Full-time equivalent (FTE)**—A term used to translate staffing needs into the number of full-time staff members needed to fill the required hours. FTE calculations consider the net amount of time a full-time staff member is available (*net annual work hours*) after time away from the job (e.g., vacation, sick leave, holidays, training time) is subtracted.

**Job description**—A detailed statement of the duties and responsibilities associated with a discrete job classification in the facility, but not necessarily tied to a specific post or shift (e.g., corrections officer, control room officer).

**Minimum staffing level.** Some jails identify minimum levels of staffing, below which the jail may not fall. In these facilities supervisors are usually given the authority to add employees by using overtime, often including mandatory overtime. Minimum coverage levels, if used, are always lower than the deployment plan and represent the staffing level below which the jail may not fall.

**Net annual work hours (NAWH).** A calculation of the number of hours employees are available to work, based on the contracted number of hours per year minus the number of hours off per staff person per year.

**Non-Relieved.** A non-relieved post or position is one that is not filled when the individual employee assigned to the post/position does not report for duty. A jail administrator would be an example of a non-relieved position; when the administrator does not report for duty, no other employee is assigned to those duties.

**Overlapping shift**—A *shift* that extends into one or two regular shifts to provide an overlap in coverage. For example, a shift supervisor might have a 9-hour shift, which begins a half-hour before a regular 8-hour shift and ends a half-hour into the following shift.

**Position description**—A detailed statement of the responsibilities and duties associated with a particular position in the facility. Also called a *job description*, although used differently here.

**Position**—A job not filled by any other staff member when the person holding the position is not on duty (e.g., secretary, classification officer, assistant jail administrator). A position has tasks that can usually be deferred until the staff member is available. Continuous coverage usually distinguishes a post from a position; a post has tasks that cannot usually be deferred.

**Post**—A job defined by its location, time, and duties that can be filled interchangeably by different staff members. Continuous coverage usually distinguishes a post from a *position*; a post has tasks that cannot usually be deferred.

**Power shift**—A shift that overlaps other shifts or is substantially different from regular facility shifts. For example, an intake officer might be assigned to work from 8 p.m. to 4 a.m. on weekends to coincide with peak periods of admission.

**Regular days off.** The specific days of the week that each employee will not be scheduled to work. In a 5-2 schedule (5 days on, 2 days off) the days will be the same each week. Other schedules, such as a 3-3 or 4-4 (often used for 12-hour shifts) will result in different days off each week until the cycle is complete and the schedule repeats itself.

**Relieved.** A relieved post or position is one that is always filled, regardless of which specific employee is used to fill it. A master control post is usually a relieved post. When the employees who are scheduled to work this post do not report for duty, other employees are provided to fill the post (using overtime, part-time employees, or other methods).

**Schedule.** The assignment of individual staff to shifts on specific days, using one or more shift configurations. The schedule assembles all of the shift configurations and matches them to employees.

**Shift Configuration.** The combination of: (a) Number of hours staff will work on a given shift; (b) Start and end times for each shift; (c) Number of days to be scheduled on and off. Many jails have more than one shift configuration.

**Shift**—A defined, recurring period of time to which staff are assigned to work.

**Staffing analysis**—A comprehensive and systematic process of determining staff needs (in response to changes in the facility's philosophy, operations, or physical plant) and developing staff assignment patterns for the facility.

**Staffing plan**—A detailed schedule on which classifications of staff are assigned to *posts* and *positions* within the facility. A staffing plan meets coverage needs consistent with local practices.

**Standards**—A broad term encompassing mandatory and voluntary operating conditions for a jail. National, state, and local standards provide important guidelines for developing and evaluating *staffing plans*.

**Supervision of inmates**—Staff activities that involve close observation and communication with inmates to ensure their physical and mental well being. Many standards require periodic inmate health and welfare checks that allow staff to confirm the condition of each inmate—not just their presence in the jail. Good supervision allows staff to sense inmate moods, anticipate problems, and prevent future problems.

**Surveillance of inmates**—Staff activities that include observing or monitoring inmate behavior, often through glass barriers or by using audio or visual equipment. For example, an officer may view a housing area or dayroom from an enclosed control station or through a closed-circuit television monitor. This should not be confused with inmate supervision.

## **APPENDIXES**

Appendix A: Project Manager's Guide

Appendix B: The Myth of Staffing Ratios

Appendix C: More on Net Annual Work Hours (NAWH)

Appendix D: Staffing and the Courts

Appendix E: Standards

Appendix F: Using the Staffing Analysis Methodology to Analyze Overtime-  
A Case Study

Appendix G: Increasing Staff Efficiency by Managing Inmate Behavior

Appendix H: Evaluation Checklist

Appendix I: Forms

Appendix J: More on Scheduling and Scheduling Tools

Appendix K: Research on the Effects of Shift Work

# APPENDIX A: Project Manager's Guide

## Introduction

This appendix is designed to assist the person(s) responsible for *managing* the staffing analysis process. It does not repeat the material contained in the main text, but it provides specific references to the Handbook and other resources in the staffing analysis toolkit.

The following pages offer advice and identify tools to help you successfully implement the staffing analysis. A staffing analysis is a “project” and project management techniques are effective throughout the process.

This workbook is divided into two parts:

- I. Designing the Staffing Analysis Project
- II. Implementing the Project

Each section offers several aids, including:

- Action steps to be completed
- Products to be developed
- Samples (where appropriate)
- References to the Handbook and other documents
- Resources that may be helpful

When troubleshooting problems, think in terms of:

- Sources (of problems)
- Solutions

You may be surprised how many of the staffing analysis steps might be needed to diagnose problems and prescribe solutions.

## Resources

The Handbook and its appendices are the centerpiece of a broader “toolkit” that has been created to aid you in many ways. In addition to the Handbook and appendices, the toolkit includes:

- Computer programs and instructions (Excel- based and stand-alone)
- Sample staffing analysis reports from several jurisdictions
- Related articles and documents
- All forms used in the Handbook and appendices

*Before you begin*, be sure to check with the NIC Information Center at [www.nicic.org](http://www.nicic.org) to ensure that you have the latest contents of the toolkit. New tools are added frequently.

## I. DESIGNING THE STAFFING ANALYSIS PROJECT

The section of the workbook helps you reach consensus on the purpose, scope and strategies that will be used to implement the process. References are provided to the Handbook. Action steps, strategies, products and resources are identified.

Designing the project involves several steps:

- A. Identifying the purpose of the project
- B. Define the scope of the project
- C. Identifying participants
- D. Assigning roles and forms of involvement
- E. Creating a project plan
- F. Inviting participants

### A. Identifying the Purpose of the Project

A staffing analysis is a means to an end. The process has proven helpful for a variety of needs, including

- *Implementing* a comprehensive staffing analysis that encompasses all aspects of the facility and its operations.
- *Creating* an initial staffing plan for a new facility or a facility that has never completed one.
- *Reviewing and evaluating* an existing staffing plan.
- *Revising* an existing plan in response to changes at the facility or in policy.
- Using one or more of the steps to *troubleshoot* specific problems, such as:
  - Finding the causes of excessive overtime
  - Refining the calculations that convert employee hours into budget requests
  - Evaluating a current coverage plan or schedule
  - Finding the best schedule to meet your needs
  - Documenting the impact of the facility on staffing needs

It is possible that different stakeholders hold varied opinions about the purpose of the project. To get everyone on the same page, you need to write a brief purpose statement that may be distributed to stakeholders<sup>1</sup> for review and comment. You might also ask the stakeholders to list a few of the most important questions that they want the staffing analysis to answer. This might prompt additional insights into their expectations.

#### **Action steps:**

1. Draft a statement of purpose for the staffing analysis. Be sure it describes the scope of inquiry and the products that will be completed.
2. Circulate the draft to key stakeholders and ask them to (1) suggest changes in the statement, and (2) list three or more of the most important questions they want to answer through the staffing analysis. You may need to introduce the staffing analysis

---

<sup>1</sup> For a list of potential stakeholders, see page 5 of the Handbook.

- process to them, using excerpts from the Handbook.
3. Collect comments and questions.
  4. Revise the purpose statement and add a list of questions to be answered by the staffing analysis.
  5. Circulate the final purposes statement and questions to the full range of stakeholders.

**Product:** Final statement of purpose for the project and list of questions to be answered.

**Sample:** Excerpt from St. Louis County (MO) *Staffing Review*, 2008. This project had a limited focus that was clearly defined at the outset.

### **Figure A.1: Sample Purpose Statement**

The [county] Department of Corrections executive staff requested a staffing analysis to determine if one or more of the following conditions exist:

- Insufficient full-time staff positions authorized in the budget to cover basic posts and positions (minimum staffing levels).
- Inaccurate staff coverage plans for the Department of Corrections, which produces unexpected demands for additional staff to address basic problems and needs.
- Failure to anticipate situations that make full-time staff unavailable to work their regular hours (such as long-term disabilities, training time, and scheduled and unscheduled time off).
- Inmate crowding (above rated capacity), higher custody classification of inmates than originally planned, increased bookings, releases, and transports—all of which increase staffing levels unexpectedly.

### **References:**

Part I, A (page 2 )for a definition of staffing analysis  
Part I, E (page 5) to identify benefits of a staffing analysis  
Part I, F (page 5) for a list of potential stakeholders

### **Resources:**

Sample staffing analysis reports in the toolkit (look at their introduction of purpose, examine the answers that are provided.)

## B. Define the Scope of the Project

The purpose statement provides the first clues to the scope of the project. Similarly, the questions posed by stakeholders offer additional insights into what the project is expected to address and what it is expected to accomplish.

Defining the scope sets the parameters for the project in terms of:

- Facilities, or units, to be included
- Operational components to be included
- Staffing analysis steps that will be involved

Facilities or units could range from a multi-building jail system to a single unit within a facility, such as intake/booking, medical, special management. A Maryland jail system implemented a comprehensive staffing analysis for its pre-release center, which was having difficulties with coverage and scheduling.

Operational components describe the activities and personnel that will be included. For example, Montgomery County, Maryland, conducted a staffing analysis for its health services component that served three facilities. A jail in Wisconsin used several of the staffing analysis steps to develop better scheduling of civilian employees.

Identifying the specific staffing analysis steps that will be implemented completes the definition of scope. The nine steps are:

1. Describe the setting
2. Chart activities
3. Develop a coverage plan
4. Evaluate the coverage plan
5. Develop schedules and calculate efficiency
6. Calculate Net Annual Work Hours (NAWH)
7. Prepare a budget
8. Write the report
9. Implement and monitor

For a comprehensive staffing analysis, steps 1 through 9 will be involved. Developing a better shift configuration would include step 5, but might also involve elements of Step 2 or Step 3.

An analysis of excessive or unexpected levels of overtime might lead the project team into several steps, depending on the causes that are identified. Figure A.2 suggests a few of the many ways that an overtime analysis might intersect with each step.

**Figure A.2: Intersection of Overtime Analysis and the 9 Steps**

Step 1: Describe the setting	<ul style="list-style-type: none"> <li>• Determine how the setting (physical, operational, technical) increases the use of overtime.</li> <li>• Explore whether working conditions are causing higher levels of employee turnover.</li> </ul>
Step 2: Chart activities	<ul style="list-style-type: none"> <li>• Identify inefficient activity scheduling or better ways to implement tasks.</li> <li>• Analyze peak periods of activity that demand higher staffing levels for brief periods of time.</li> </ul>
Step 3: Develop a coverage plan	<ul style="list-style-type: none"> <li>• Explore alternative ways to deploy employees to increase efficiency and effectiveness.</li> <li>• Analyze coverage plan to identify opportunities for split posts.</li> </ul>
Step 4: Evaluate the coverage plan	<ul style="list-style-type: none"> <li>• Use evaluation tools to critically examine current coverage practices in order to find potential deficiencies and inefficiencies.</li> </ul>
Step 5: Develop schedules and calculate efficiency	<ul style="list-style-type: none"> <li>• Evaluate the extent to which current scheduling practices deploy staff when they are not needed.</li> <li>• Use tools to identify more efficient shift configurations and schedules.</li> </ul>
Step 6. Calculate Net Annual Work Hours (NAWH)	<ul style="list-style-type: none"> <li>• Increase the accuracy of calculations.</li> <li>• Calculate the impact of staff turnover.</li> </ul>
Step 7. Prepare a budget	<ul style="list-style-type: none"> <li>• Find discontinuities in the “chain of evidence” that should link the setting, activities, coverage, scheduling and NAWH to the budget request.</li> </ul>
Step 8. Write the report	<ul style="list-style-type: none"> <li>• Explore ways to present findings more effectively and to educate policymakers about needs.</li> </ul>
Step 9. Implement and monitor	<ul style="list-style-type: none"> <li>• Analyze data about staffing plan implementation.</li> <li>• Create new monitoring protocols that will collect needed information or data.</li> </ul>

**Action Steps**

1. Draft a statement of scope that defines the facilities and units to be addressed, and the operational components.
2. Circulate the draft to key stakeholders to secure confirmation.
3. Collect comments and questions and finalize statement of scope.
4. Create a table such as the one shown in the Figure I.2, identifying the staffing analysis steps that will be involved with the project.

**Products**

- Final description of scope of project.
- Completed Table A.2, identifying steps to be involved with the project.

**Sample**

The following table uses the statement of purpose and questions from St. Louis County, MO, that were shown as a sample in section I.A.

**Figure A.3: Sample Form 1A-- Identifying Staffing Analysis Steps**

<b>Form 1A Purpose and Questions to be Addressed.</b> The [county] Department of Corrections executive staff requested a staffing analysis to determine if one or more of the following conditions exist:	1. Setting	2. Actitives	3. Coverage	4. Eval. Coverage	5. Schedules	6. NAWH	7. Bduget	8. Report	9. Implement
Insufficient full-time staff positions authorized in the budget to cover basic posts and positions (minimum staffing levels).			√		√	√	√		
Inaccurate staff coverage plans for the Department of Corrections, which produces unexpected demands for additional staff to address basic problems and needs.			√	√					
Failure to anticipate situations that make full-time staff unavailable to work their regular hours (such as long-term disabilities, training time, and scheduled and unscheduled time off).						√			
Inmate crowding (above rated capacity), higher custody classification of inmates than originally planned, increased bookings, releases, and transports—all of which increase staffing levels unexpectedly.	√	√	√	√					
<i>Report and act on decisions.</i>								√	√

**References**

- Part I, D (page 4) When to Use
- Part I, G (page 7) Jail Characteristics and Staffing Considerations
- Part I, H (page 9) Staffing Analysis Process

**Resources**

Sample staffing analysis reports in the toolkit (look at their introduction of purpose, examine the answers that are provided.)

**Forms**

Form 1A: Purpose and Questions to be Addressed

## C. Identifying Participants

The value of the staffing analysis process described in the Handbook is derived in large part from the nature and amount of participation that goes into the process by the many stakeholders.

As project manager, you will be responsible for identifying the specific stakeholders who will be involved in the project, defining their roles (I.D) and inviting their participation (I.F).

### **Types of Persons to Participate**

Many people have a stake in jail staffing practices. The Hand book identified the following types of primary stakeholders:

#### Primary Stakeholders

- The sheriff, correctional director, or other official responsible for the jail.
- Jail administrators and managers.
- First line supervisors.
- Line officers.
- Program staff.
- Contract service providers, such as health service or food service.
- Policymakers, such as commissioners, council members, and city managers.
- Budget analysts and personnel managers.
- Risk managers.
- Representatives of labor organizations, such as unions and bargaining units.
- Jail inspection officials.
- Jail civilian staff.
- Jail service providers.
- Community service providers (human services, substance abuse treatment, etc.)

In addition to the preceding persons who have a direct interest in the way the jail operates, several types of secondary stakeholders have been involved in staffing analysis projects in some jurisdictions. These include:

#### Secondary Stakeholders

- Workforce development entities
- Employment agencies
- Business community (who employ inmates after release)
- Inmate advocates
- Inmate families (who are concerned about inmate safety and welfare)
- Religious community
- Educators and training providers
- Taxpayers groups

## Tangential Stakeholders

In addition to the primary and secondary stakeholders, consider inviting representatives of other agencies that operate 24-hour-day entities, such as 911, fire, police, juvenile facilities, community correctional facilities and other public safety entities. You might find it helpful to invite other types of 24/7 operations from the health and human services sector, such as hospitals, nursing homes, and treatment facilities. These agencies will benefit from watching the staffing analysis process and will also provide some fresh perspectives that will be helpful, especially when you are trying to “think outside the box.”

When the Hennepin County Sheriff conducted a comprehensive staffing analysis for the detention center that he operated, he also invited representatives from the county’s House of Corrections, a sentenced offender complex operated by another county agency. When the sheriff had the opportunity to send county personnel to a staffing analysis training event, he offered the slots to the community corrections agency and the residential juvenile facility.

Some jurisdictions have found it helpful to invite other representatives of the community to participate as a way to educate them about jail conditions and operations and the complexity of staffing.

Some of these stakeholders might seem tangential, such as the religious community. Consider the existing *and potential* links between the jail and the religious:

- Religious volunteers and professionals are affected by staffing practices when they encounter difficulty visiting inmates in jail, or conduct services at the facility.
- Faith-based initiatives in many communities work with inmates before and after their release from confinement.
- The religious community is often contributes to the jail in other ways.

Don’t panic! The long list of potential participants does not mean that everyone will be meeting at the same time, or even meet at all. Section I.D explores varied roles for participants and strategies for facilitating their participation.

Form 2A provides a format for organizing the participant selection process. It is shown in Figure A.4.

As project manager, you will probably want to consult with others about the participant selection process. Seek advice from your colleagues. Do not hesitate to approach your supervisor to identify specific types of stakeholders to involve and then to assemble lists of potential names.

### **Two or Three for the Price of One**

It is likely (and desirable) to identify individuals who might fill more than one stakeholder function. A line staff member might also be a union steward, for example. Be alert for such opportunities.

## Let Them Select Their Representative

In some instances, you may decide to ask an agency or entity to select a person to participate. Sometimes this will be politically expedient (some groups like to decide for themselves) and sometimes you will do this because you do not know someone in the stakeholder group.

**Figure A.4: Form 2A, Identifying Individuals by Stakeholder Group**

FORM 2A: Identifying Individuals by Stakeholder Group	Relationship to the Jail			Specific individual(s) to invite
	Primary	2ndary	Other	
Stakeholder Category				
Sheriff, correctional director, or other official responsible for the jail.				
Jail administrators and managers.				
First line supervisors.				
Line officers.				
Program staff.				
Contract service providers, such as health service or food service.				
Policymakers-commissioners, council members, and city managers.				
Budget analysts and personnel managers.				
Risk managers.				
Representatives of labor organizations-- unions and bargaining units.				
Jail inspection officials.				
Jail civilian staff.				
Jail service providers.				
Service providers (human services, substance abuse treatment, etc.)				
Workforce development entities				
Employment agencies				
Business community (who employ inmates after release)				
Inmate advocates				
Inmate families (who are concerned about inmate safety and welfare)				
Religious community				
Educators and training providers				
Taxpayers groups				
Other				
Other				
Other				
Add pages as necessary				

### Action Steps

1. Use Form 2A to identify the *types* of stakeholders to be involved. Add to the list as needed.
2. Share the list of stakeholders types you had drafted with one or more of your colleagues to get their thoughts. Revise the list as appropriate.
3. Start to put individual names onto Form 2A. You may have more than one candidate for a stakeholder slot, or you may want to have more than one representative from that stakeholder group.
4. Share your draft Form 2A with several colleagues, and with others who will be involved with approving the selections. Revise as appropriate based on their comments.

**Product(s):** Completed Form 2A, or similar list of stakeholder types and individual representatives.

### **Sample**

The following list presents the participants in the Marion County (IN) staffing analysis project. The list identifies two categories: a core team that met frequently and a full committee whose members were involved intermittently. Information in brackets provides additional insights into some participants' positions.

#### **Core Team**

Capt. David Crisler Sr. – Marion County Sheriff's Department [administration]  
Lt. David Crisler Jr. – Marion County Sheriff's Department [training]  
Lt. Tina Kriech – Marion County Sheriff's Department [shift commander]  
Terry Nelson – Marion County Auditor's Office [budget office representative]  
Mark Shilling – Marion County Sheriff's Department [line officer]  
Rudy Valadez - Teamsters Local 135 [employee representative of labor union]  
Julie von Arx – Marion County Sheriff's Department Consultant [planner]  
Sgt. William Weaver – Marion County Sheriff's Department [first line super.]

#### **Full Committee (In addition to Core Team)**

Bart Brown – City Controller  
Bill Dowden – City County Council  
Paul Downing – Indiana State Jail Inspector  
Gordon Hendry – Mayor's Office  
Mary Moriarty – Adams – City County Council  
Kevin Murray – Locke Reynolds LLP (Marion Co. Sheriff's Department Counsel)  
Col. David Pankoke – Marion County Sheriff's Department [commander]  
Geneva Roembke – Marion County Sheriff's Department [commander]  
Barry Shimmel – Teamsters 135 [labor union central office representative]  
Lt. Mark Smith – Marion County Sheriff's Department  
Debra Sullivan – Marion County Sheriff's Department  
Steve Talley – City County Council  
Major Michael Turner - Marion County Sheriff's Department [jail admin.]

### **References**

Part I, F (page 5) Who Should be Involved

### **Resources**

Sample staffing analysis reports in the toolkit (look at their list of participants)

### **Forms**

Form 2A: Identifying Individuals by Stakeholder Group

## **D. Assigning Roles and Developing Forms of Participation**

Now that participants have been identified, you should consider that various roles that they might play in the project. Doing this before you start to invite participants will help tailor your invitation to each participant, making your expectations clear.

Although you will outline potential roles at this point, be open to changes as individual become involved with the project. Some will want to become more involved, others will want to pull back. The project is a dynamic process and you should expect changes.

### **Forms of Participation**

There are many ways for stakeholders to participate in the project. Create an outline of the primary forms of participation at the outset. This will help clarify the roles and levels of involvement that you anticipate for each participant.

The following outline identifies a range of means by which individuals may participate in the project. Use this as a starting point for designing your own structure.

#### Participation Modes

##### In-Person Participation

- Working Group (WG). Active, continuing involvement throughout the project. Hands-on participation.
- Milestone Meetings (MM). Meet only when a body of work has been completed to review and reach a consensus on findings and recommendations.
- Progress Briefings (PB). Receive periodic briefings on the project and its progress.
- Task Consultation (TC). Directly involved when needed to provide information and advice about a specific issue or function. This includes small task groups that might be formed to develop a specific piece of the process, such as NAWH.

##### Review and Comment

- Progress Reports (PR). Receive periodic summaries of work that has been accomplished and current activity. Keeps someone apprised of the status of the project.
- Draft Products. (DP). Receive drafts of products for review and comment. Offers someone the opportunity to identify errors, comment on the product and make suggestions.

It is likely that some of your secondary stakeholders, or even some of the tangential stakeholders might be asked to play a central role in the project:

- A representative from the county's law enforcement division might want to see the entire project so that he/she may implement a staffing analysis in their division.
- A community member might have experience from the private sector that will be useful to all aspects of the project

- An aid to a county commissioner might be assigned to be involved with the entire project so that he/she may provide advice to the commissioner. While this might appear to be more of an observer or auditor, you should try to draw this person into a more active role.

Many participants will have more than one form of participation. Tailor the forms to the individuals—their interest, availability and position.

### Matching Forms of Participation to Individuals

Use Form 3A to develop a matrix of participation. Remember that this will change and individuals join the project and it progresses. The matrix is a starting point and will help focus your invitations.

**Figure A.5: Form 3A, Identifying Participation by Stakeholder Group**

Relationship			FORM 3A: Identifying Participation by Stakeholder Group	Type of Participation					
Prim.	2ndary	Other		Check all that apply for each stakeholder. See codes.					
			Stakeholder Category	A	B	C	D	E	F
			Sheriff, correctional director, or other official responsible for the jail.						
			Jail administrators and managers.						
			First line supervisors.						
			Line officers.						
			Program staff.						
			Contract service providers, such as health service or food service.						
			Policymakers-commissioners, council members, and city managers.						
			Budget analysts and personnel managers.						
			Risk managers.						
			Representatives of labor organizations-- unions and bargaining units.						
			Jail inspection officials.						
			Jail civilian staff.						
			Jail service providers.						
			Service providers (human services, substance abuse treatment, etc.)						
			Workforce development entities						
			Employment agencies						
			Business community (who employ inmates after release)						
			Inmate advocates						
			Inmate families (who are concerned about inmate safety and welfare)						
			Religious community						
			Educators and training providers						
			Taxpayers groups						
			Other						
			Other						
			Other						
			Add pages as necessary						

### Meaningful, Not Just Going Through the Motions

Stakeholders need to be provided with meaningful opportunities to participate in the project. Whatever methods are used, you will not be successful unless the *entire* stakeholder group:

1. Has *meaningful and timely* opportunities offer their comments; and
2. Their ideas are carefully considered, regardless of their *perceived* “expertise” on the subject matter. Often times, a lack of knowledge of the operation provides a valuable perspective to this process.

Participation in any form provides a way to tap the resources and ideas of relevant parties and increase their commitment to the process. It also increases the likelihood of their support for the end product. For example, if they are involved in the process and help shape its outcomes, staff may be more cooperative if schedules need to be changed, and budget officials may be more easily convinced of the need for additional funds. Just as important, it helps stakeholders to *understand* the process, findings and recommendations.

### **Action Steps**

1. Outline the specific forms of participation that you anticipate for your project. A list of six forms was provided earlier in this section.
2. Start completing Form 3A, entering the stakeholder categories (first column) from Form 2A and the participation forms you identified in the preceding action step.
3. Assign one or more forms of participation to each stakeholder category in Form 3A.
4. Share your draft Form 3A with others as appropriate to secure their comments, and as needed, their approval.
5. Finalize Form 3A.

### **Product**

- Completed Form 3A that identifies forms of participation for each individual who is to be invited.

### **Sample**

Figure A.6 provides a sample of Form 3A using the six types of participation identified earlier in this section.

### **References**

I.F (page 6), Who Should be Involved?

### **Resources**

Review the lists of participants in the sample staffing analysis reports in the toolkit. Look for stakeholders that you might not have identified.

### **Forms**

Form 3A: Identifying Participation by Stakeholder Group

**Figure A.6: Sample Form 3A, Identifying Participation by Stakeholder Group**

Relationship			FORM 3A: <i>SAMPLE</i> Identifying Participation by Stakeholder Group	Type of Participation Check all that apply for each stakeholder. See codes.					
Prim	2ndary	Other		WG	MM	PB	TC	PR	DP
<input checked="" type="checkbox"/>			Stakeholder Category Sheriff, correctional director, or other official responsible for the jail		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>			Jail administrators and managers.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>			First line supervisors.	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>			Line officers.	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>			Program staff.		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>			Contract service providers, such as health service or food service.		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>			Policymakers-commissioners, council members, and city managers.		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>			Budget analysts and personnel managers.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>			Risk managers.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>			Representatives of labor organizations - unions and bargaining units.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>			Jail inspection officials.		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>			Jail civilian staff.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>			Jail service providers.		<input checked="" type="checkbox"/>				
	<input checked="" type="checkbox"/>		Service providers (human services, substance abuse treatment, etc.)				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>		Workforce development entities					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>		Employment agencies					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>		Business community (who employ inmates after release)					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>		Inmate advocates			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
	<input checked="" type="checkbox"/>		Inmate families (who are concerned about inmate safety and welfare)					<input checked="" type="checkbox"/>	
		<input checked="" type="checkbox"/>	Religious community				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		<input checked="" type="checkbox"/>	Educators and training providers				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>	Taxpayers groups					<input checked="" type="checkbox"/>	
			Other						
			Other						
			<i>Add pages as necessary</i>						
<b>CODES</b>			WG- Working Group	TC- Task Consultation					
			MM- Milestone Meeting	PR- Progress Reports					
			PB- Progress Briefings	DP- Draft Products					

## E. Develop a Project Plan and Schedule

Now it is time to sketch out an overall plan for the project and to assign target dates for completion of milestone events.

After participants have been invited, you will begin working on the steps of the staffing analysis process. Section II of this appendix provides guidance and tips for each of the nine steps. At this point you will be deciding when to start work on each step and estimating the time it will take to complete it.

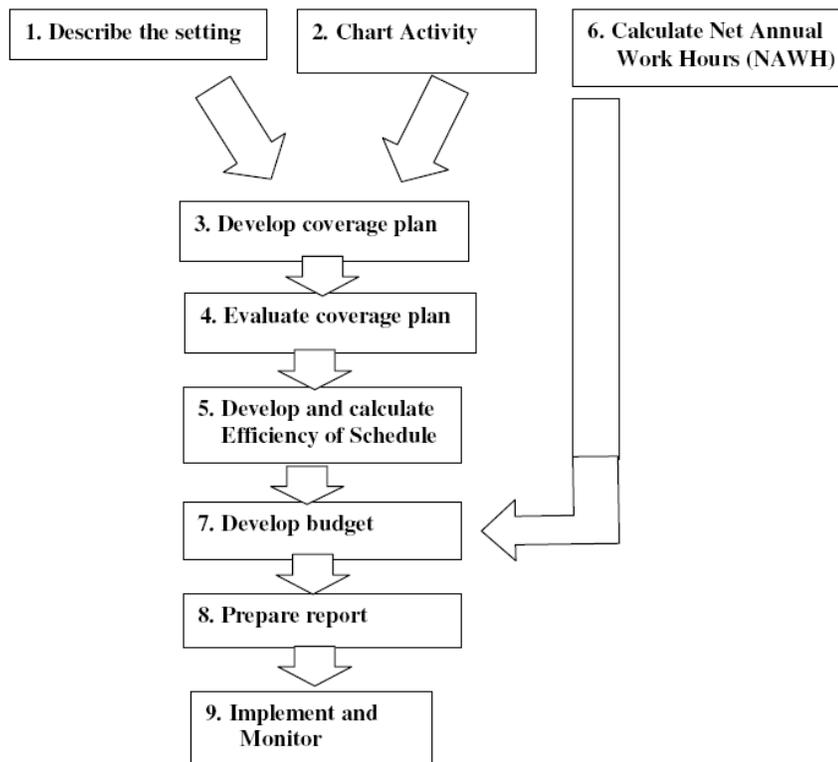
### Steps 1, 2 and 6 May be Implemented Concurrently

Although most of the steps in the staffing analysis process are sequential, building on the previous step, three steps may be implemented at the outset of the project:

1. Describe the setting
2. Chart activities
6. Calculate Net Annual Work Hours (NAWH)

Figure A.6 provides a simple schematic of the sequencing of the nine steps.

**Figure A.6: Implementation Sequence for the Nine Steps**



Why is Step 6 started so early in the process? Because the information and data needed for Step 6 may be difficult to assemble the first time. By starting work on this step at the beginning of the project you will be more likely to have the results of Step 6 when you need them.

Steps 3, 4 and 5 are consecutive, building on the preceding steps. Similarly, steps 7, and 8 and 9 are also consecutive.

There are many forms and formats for project charting, including many computer-based tools. Treat the staffing analysis as a project and use the form, formats and tools that work best for you. If you do not have a project planning format that is familiar to you, the NIC Information Center has instructions for “action planning” that provides a simple format to describe steps, tasks, participants, products and time frames.

If your project involves fewer steps, adjust your plan accordingly.

### **How Much Time?**

Estimating the time it will take to complete steps in your implementation plan is difficult. There are some activities that will be difficult to control, such as the extent to which draft materials will have to be revised based on comments received from reviewers.

Data and information collecting activities often require significant time if you have not completed a comprehensive staffing analysis before. Updating and revising a previous staffing analysis will take less time, especially if new data collection protocols were put in place after the first project was completed.

The sample staffing analysis reports in the toolkit offer some case studies in terms of total time for completion of step 8 (report):

- Hennepin County, MN. Comprehensive staffing analysis. 5-6 months
- Marion County, IN. Comprehensive staffing analysis. 5 months
- St. Louis County, MO. Targeted study of overtime. 5 months
- York County, ME. Abridged staffing analysis. 3 months

The amount time will also depend on the amount of time participants are able to commit to their tasks, and to some extent, the skills that they bring to the table. Someone who is experienced with Excel will take less time to analyze activities, coverage and schedules, than a novice.

You may want to look outside of your participant list for assistance with some of the tasks. Local colleges and universities might be pleased to be invited to help with data analysis and other activities. The Service Core of Retired Executives (SCORE), operated by the Small Business Administration (SBA) maintains a cadre of experienced retired professionals who have many of the skills that will be needed for the staffing analysis. Other volunteers might be available in the community.

## **Set a Schedule and Work Toward It**

The staffing analysis process is broad and complex enough to take months and months of time for completion. Many jurisdictions have been successful in establishing a deadline that works for them (usually completing the staffing analysis as the budget cycle begins) and allocating time and personnel to meet the deadline. Working backward from a deadline—as long as it is reasonable—may be a good strategy.

## **Do Not Rush the Creative Activities**

Every step of the process provide opportunities to “think outside the box” in an effort to improve current policies, practices, facilities and technology. Examples of creative opportunities for the first six steps include:

- Step 1: Context
  - Rethinking how the current facility is used
  - Considering the current and potential use of technology
- Step 2: Activities
  - Changing the time that some activities and tasks are implemented
  - Changing the way that some tasks are implemented
- Step 3: Coverage
  - Critically examining how long coverage lasts for a specific post
  - Changing starting times to “think outside the schedule”
  - Exploring combining posts
- Step 4: Evaluation
  - Finding instances in which coverage exceeds actual needs
  - Developing tasks to occupy employees when they have extra time on a shift
- Step 5: Schedules
  - Calculating the efficiency and effectiveness of current schedules
  - Exploring changes in shift configurations that yield more efficiency
  - Creating a consensus about the attributes of good schedules so you know it when you see it
- Step 6: Net Annual Work Hours
  - Creating new protocols to collect better data to inform NAWH

Although you need to establish a project schedule, try to be flexible when the creative juices are running with the participants. The process offers many opportunities to critically examine all aspects of the jail and to find better ways to use the facility and operate.

Do not be afraid to re-visit steps after leaving them, this process can be a fluid one.

## **Action Steps**

1. Talk to the person in charge of your agency and identify a deadline for the staffing analysis process.
2. Draft an “action plan” or similar project plan that describes:
  - a. Tasks and subtasks
  - b. Time frames for completion

- c. Persons to be involved and their roles
- d. Person(s) to be responsible
3. Circulate the draft to appropriate persons for review and comment.
4. Finalize the plan based on comments and suggestions that were received.

## **Products**

Project plan

### **F. Invite People to Participate**

Now that you have identified participants, assigned roles and developed a project plan it is time to invite individuals to become involved.

The process of inviting participants might vary based on the who is involved. Some invitations might be offered in person, others might use other forms of communication. It is usually best to have the invitation formally extended by the highest level of policymaker for the agency and jurisdiction, such as sheriff and county commissioners.

Even if an invitation is offered verbally, it is important to provide each prospective participant with a written letter of invitation that includes:

- Purpose of the project (see I.A)
- Scope of the project (see I.B)
- Range of participants who are being invited (see I.C)
- Role(s) that you are asking each individual to play in the process (see I.D)
- Project plan and schedule

Invitations might also want to address additional topics such as asking for a representative to be assigned if the invitee is unable to participate.

There should be some form of response that each individual submits, agreeing to participate or not, and in some instances suggesting one or more persons who should be considered. The logistics of the project will be easier if each participant submits a form that identifies times that he/she can, and cannot meet during an average month. Such “when can we meet” forms are usually a simple one-month calendar with instructions for participants to indicate times that they are available for meetings.

When responses have been received from all invitees, and the when-to-meet information has been assembled, you are ready to schedule kick-off events and start the process.

## **Action Steps**

1. Decide *how* to invite participants to join the process. Consult with policymakers as needed to be sure that all angles are covered.
2. Develop invitation materials, including:
  - a. Letter of invitation
  - b. Response form including “when can we meet” matrix
3. Deliver invitations and process responses.

4. Create a schedule for initial meetings and events based on the participants' responses about available times

### **Products**

- Invitations
- Response form, including identification of available times to meet

### **References**

- Handbook, Part I, provides descriptions about the process, the benefits and the unique characteristics of jails.
- Handbook, Part II, provides descriptions for each step. You are encouraged to use any and all parts of the Handbook and all of the resources in the toolkit to improve your process and outcomes.

### **Resources**

- Handbook sections to be used for briefing materials for participants at various stages of the process
- Sample reports in toolkit

## II. IMPLEMENTING THE STAFFING ANALYSIS, STEP BY STEP

This section of the workbook provides guidance for you as the project manager and you navigate through each step of the staffing analysis process. The Handbook outlines each step and explains the forms and tools that are available. This workbook does not repeat the contents of the Handbook but rather tries to provide tips and strategies for implementing each step of the process. Think of this appendix as a Teacher's Guide and the Handbook as the textbook.

### The Staffing Analysis Toolkit

A variety of resources have been assembled into a 'toolkit' to support the staffing analysis process. The collection of resources expands frequently as new samples, techniques, case studies and tools are added from the field.

The contents of the toolkit, at the time this workbook was completed, are described in Figure A.7.

#### Figure A.7: Staffing Analysis Toolkit Contents as of [Date.....]

- **NIC Staffing Analysis Handbook and Appendices**
- **Forms** (in PDF and Word, and for some forms Excel)
- **Computer-Based Tools**
  - "Autopost" Programs in Excel, for Activities, Coverage and Scheduling
  - A freestanding program that also addresses Activities, Coverage, Scheduling and that includes other analytical tools
- **Sample Staffing Analysis Reports**
  - Hennepin County, Minnesota
  - Marion County, Indiana
  - Palm Beach County, Florida
  - St. Louis County, Missouri
  - Waukesha County, Wisconsin
  - York County, Maine
- **Articles, Standards and Other Resources**
  - *Sheriff* magazine (21 articles)
  - *Core Standards for Jails*, American Correctional Association (ACA)
  - Other articles and references, including caselaw summaries
  - Training materials, such as powerpoint presentations, used in field

*Remember to check with the NIC Information Center periodically to find the latest resources that have been added to the toolkit. [www.nicic.org](http://www.nicic.org)*

An up-to-date listing of staffing analysis resources is also provided at [www.staffinganalysis.com](http://www.staffinganalysis.com), and at its parent web site, [www.correction.org](http://www.correction.org).

## **Staffing Analysis Commandments**

Several imperatives should be introduced at the outset and should be remembered throughout the process.

1. Nothing is too small.
2. Everything goes somewhere.
3. Leaving something out will hurt *you*.
4. Why, why, why?
5. Think outside of...everything.

### **Nothing is Too Small**

One of the purposes of a staffing analysis is to inform the budget setting process. Leaving out any detail of jail operations that has a staffing implication means that budget needs will be underestimated and you will be hard-pressed to address the details without going over your budget.

The little things really add up. Do not lose any of them. This will be an issue in every step. When your staffing analysis is complete you should be able to connect every dollar in the budget to specific hours worked. If you ignore the little things, the accuracy and credibility of the staffing analysis will be compromised.

### **Everything Goes Somewhere**

You will encounter many situations in which a team member says “What about x? Should that go here?” Example: when working on activities, some suggest that monthly CERT training should be included as an activity. You respond that a monthly activity does not fit into Step 2, but...

- Put that on the list to consider in Step 3, Coverage
- Or in Step 6, Net Annual Work Hours

Everything that happens in the jail should be reflected somewhere in the staffing analysis. Leaving out the details will invariably leave you short in the end. Make a list of “orphans” as you work through the process. Look at the list as you move into a new step and see if you can cross an item off by incorporating it into the step. At the end, nothing should be left homeless.

### **Leaving Something Out Will Hurt *You***

The staffing analysis process embraces all aspects of facilities, technology, and operations. When you leave something out of the analysis, you will likely come up short when you operate the jail. If you fail to identify all of the sporadic details in Step 3 (Coverage), the hours to be bought with the budget will be short. The details will demand staff, but you will not have made provisions for them.

If you neglect to put a category of staff absence on the list of deductions in Step 6, you will end up overestimating the number of hours a class of employee will be available to work on

the floor each year.

In most instances, your primary challenge is to be sure everything has been identified, considered, and included. Omitting something will likely leave you short.

### **Why, Why, Why?**

Everything should be on the table for reconsideration in the staffing analysis, including:

- How you do things
- Where you do them
- Who does them
- When they are done
- And more

The staffing analysis process is a chance to re-think all aspects of your jail in an effort to find new and better ways to operate.

Be sure that your team learns how to challenge the existing situation by constantly (and often annoyingly) asking questions like:

- Why do we do it that way?
- Why can't we conduct the search here instead of there?
- Can't we let a clerk handle this task?
- Why don't we make that court list on the midnight shift when things are quiet?
- Why does the activities officer come in at 0700 when the first activities don't start until 9:15?

At first, you will have to model this behavior. It will be annoying. It will slow the process down. But the first time you ask "Why?" and no one can come up with an explanation other than, "We've always done it that way," you will start to hook your team.

### **Think Outside of...Everything**

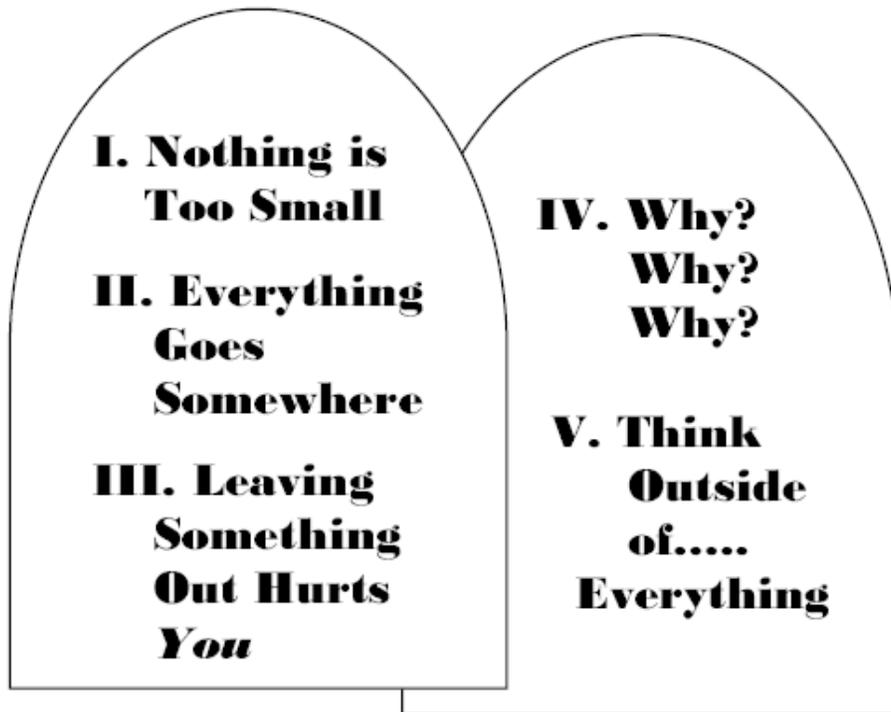
The incessant why-why-why will shake things up as you work through the process. Refuse to let your team fall back on the status quo when a change will work better. Sure, change can be inconvenient. But so can running short on shifts for the last three months of the budget cycle. It is important to think outside the:

- *Facility*- considering new ways to use what you have and ways to adapt the facility to better fit your operations
- *Policy and Procedure Manual*- improving your practices may create new efficiencies as well as making your operations more effective
- *Technology*- existing technology may be slowing you down or failing to accomplish what you intended; new technology might be used appropriately to supplement some of your activities
- *Schedule*- this may be the toughest one, but it is often the most productive area for improving efficiency. Be open to amending schedules, adding more shift

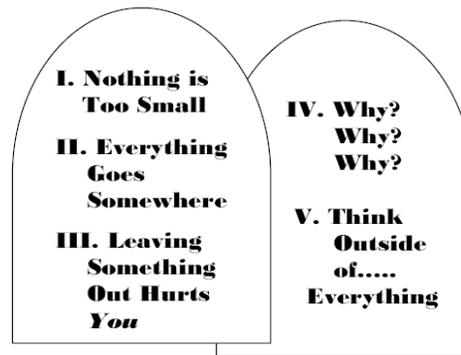
configurations, changing shift starting times, staggering start times, and more. A schedule should implement your coverage plan, not the other way around.

- *Personnel practices*- explore ways to make employees more productive, reduce sick time, increase fairness, and more. Don't let existing contracts limit our thinking; if the benefits are great enough, it may be worth the effort to change the contract.

As team leader you want to foster a sense of skepticism among your team members. They should approach all current operations and facilities as an opportunity to find better ways to get things done. Don't worry, the things that you are doing well will survive this testing process. And you will undoubtedly find significant improvements along the way.



**Step 1. Describing the Setting**  
(see Page 12 of Handbook)



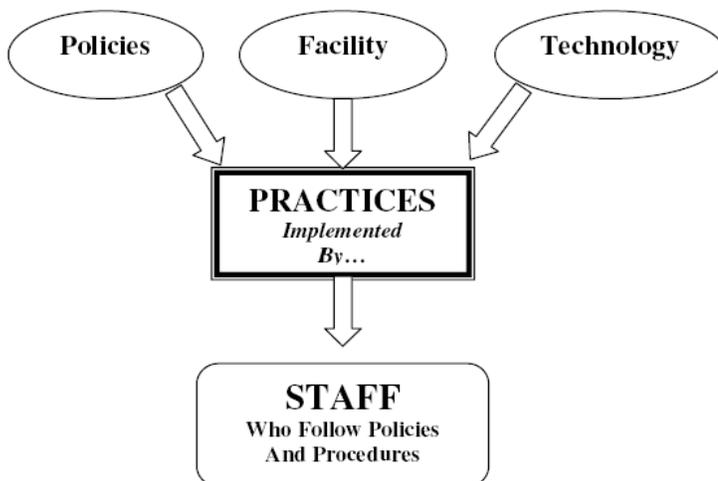
You may need to push your team to do a good job describing the setting. Often the first reaction is “I already know it.” Sometimes a colleague will say “What does this have to do with staffing?”

- Help *others* to understand the challenges posed by the jail setting
- Invariably reveal some new insights for jail operators
- Highlight many changes that have occurred in all aspects of the setting
- Make many connections between the setting and staffing practices and needs
- Provide a strong foundation for the subsequent steps

**Connecting Staffing to... Everything**

Jail staffing is closely connected to *every* aspect of jail facilities, policies, practices and technology. It is difficult to find a characteristic of the jail that does *not* affect staffing in some way. Figure A.8 presents a simple schematic diagram that links staffing to the setting.

**Figure A.8: Connecting the Setting to Staffing**



Practices—what we do in the jail—are *determined* by policies, facilities and technology. Practices are *implemented* by staff. Changes in policies, facilities and technology affect staffing.

As project manager, you will need to help your colleagues understand the ways that staffing is connected to the setting. Give them examples that show the impact of changes in jail characteristics on staffing needs.

Figure A.9 presents a simple format that you might find helpful to help your colleagues to appreciate the linkages between features of the jail setting, changes, and staffing. It is drawn from the list of information on page 13 of the Handbook.

**Figure A.9: Connecting Staffing to Characteristics of the Jail Setting**

Characteristics of the Setting	Example(s) of Changes in Past Five Years	Examples of Impact on Practices and Staffing
Facility rated capacity.		
Average daily population for broken into various groupings.		
Number of admissions and releases, time and day of week		
Length of stay-- not just average, but with breakdowns		
Inmate characteristics (e.g. age, race, sex, residence, charge, status—pretrial, pre-sentenced, sentenced, hold..)		
Type of charges (e.g. traffic, misdemeanor, felony; violent, nonviolent).		
Number and types of classifications and housing separations.		
Mission statement.		
Facility design (floor plan).		
Location and condition of equipment such CCTV, detection systems, etc.		
Organizational chart, span of control, management philosophy.		
Current staffing plan, schedule, shift rosters.		
Current staff work-hour information.		
Number and types of critical incidents.		
Personnel agreements, union contracts.		
State and professional standards.		
Problems experienced with facility operations		

## Appreciating the Magnitude of Changes

Jail personnel experience change in the setting on a daily basis. Every day is different—a different mix of inmates, personnel and physical conditions. Change is so pervasive in the jail that it often becomes part of the landscape. This step in the staffing analysis provides the opportunity to step back and assess the cumulative impact of change—to see the forest, not just the trees.

One exercise that has proven effective to help participants understand the magnitude of change is to simply ask them to identify changes that have occurred in the past five years (or another time frame). Record their comments on a board or chart. It may be helpful to prompt the discussion by asking for changes in inmates, employees, the facility, technology, policies and such. As you record responses and the list gets longer participants will begin to appreciate how much change has occurred.

Several of the sample staffing analysis reports in the toolkit present lists of such changes. Figure A.9 presents a summary of changes identified in the York County, Maine, report.

**Figure A.9: Changes Presented in York County, Maine, Report**

Changes in the Inmate Population	Changes with Facility
<ul style="list-style-type: none"> <li>• More of them!</li> <li>• Younger</li> <li>• Less respectful</li> <li>• More medical needs</li> <li>• More inmates with mental health needs and challenges</li> <li>• “Spoiled” seem to feel entitled</li> <li>• State inmates added to jail population (they “expect more”)</li> <li>• Generational issues</li> <li>• Repeat admissions</li> <li>• Don’t care</li> <li>• More females</li> <li>• More serious crimes</li> <li>• More drug-related crimes</li> <li>• More out of state inmates</li> <li>• More diversity (implications for meals, religion, language interpreters)</li> <li>• More language barriers</li> <li>• Fewer “good” inmates</li> </ul>	<ul style="list-style-type: none"> <li>• Staff are much more spread out in the new facility—farther apart, affects backjup</li> <li>• HVAC balancing problems persist</li> <li>• 3 staff areas have no staff restrooms</li> <li>• Intake area is cramped at times</li> <li>• Design did not anticipate need to separate non-strip-searched arrestees</li> <li>• Video arraignments added but held in a visitation room</li> <li>• Added 22 bunks</li> <li>• Increased use of program space</li> <li>• No longer use housing pod cleaning closets as planned, different practices</li> <li>• Female unit now used for males</li> <li>• Females now housed in former male area</li> <li>• “Created” a housing unit for state inmates</li> </ul>
<p><b>Other Changes</b></p>	<p><b>Changes with Technology</b></p>
<ul style="list-style-type: none"> <li>• Standards evolve (e.g. arrestee strip search limitations)</li> <li>• Health issues, contagious diseases such as MRSA, need for precautions</li> <li>• Safety concerns increasing</li> <li>• Economy faltering</li> <li>• Community is more diverse</li> <li>• More programs</li> <li>• Religious services expanding, larger groups</li> </ul>	<ul style="list-style-type: none"> <li>• Fixed metal detectors</li> <li>• Hand-held metal detectors</li> <li>• Tasers</li> <li>• Radios, but not location assignable</li> <li>• Duress alarms, assignable</li> <li>• Cameras</li> <li>• Video visitation added</li> <li>• Video arraignment added</li> </ul>
	<p><b>Changes in staff</b></p>
	<ul style="list-style-type: none"> <li>• Getting older (and ready to retire)</li> <li>• Younger employees               <ul style="list-style-type: none"> <li>○ Different attitudes toward work</li> <li>○ Different values</li> </ul> </li> <li>• Less cohesion and teamwork</li> </ul>

Not all changes are bad. York County had new technology in several forms (video visitation, metal detectors, duress alarms, cameras) in the new jail. The point of the exercise is not to suggest that change is bad, but rather than most change has a direct impact on staffing practices and needs.

### **Making It Look Easy In Spite of Challenges**

Motivate your colleagues by reminding them that they often complain that “no one understands what we do or what we need.” Tell them this is their chance to paint a complete picture of their world. Challenge them to find effective ways to communicate the jail setting to outsiders.

Jail employees are very good at “making do” with the resources that are available. Locking systems fail to function, more inmates crowd into cells, inmates are more dangerous and spend more time in confinement— and jail personnel tighten their belts and somehow keep things running. From the outside, they make it look easy.

Keeping a lid on, often at great risk, sometimes backfires when policymakers do not appreciate how difficult and sometimes dangerous the jail has become. Jail personnel feel as though they are barely hanging on while policymakers pat them on the back and say “Keep up the good work.”

Step 1, done well, helps all stakeholders to develop a better understanding of all aspects of the jail. The connections to staffing will be drawn in the subsequent steps of the process.

### **Describing the Inmate Population**

A lengthy narrative that starts on page 13 explores strategies and techniques that will help you gain a better understanding of the inmate population. This, in turn, will make it easier for you to educate others about the inmates who are confined on a given day.

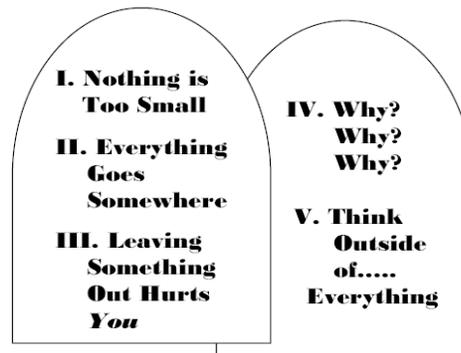
### **Build on What You Already Have**

It is likely that you have many of the elements that will comprise the Step 1 product in hand. Annual reports, facility floor plans, and other existing documents should make this step a bit easier.

### **How Will This be Used?**

Subsequent steps will rely on much of the material that you assembled for Step 1. You will be surprised how participants will turn to these products. The material should also be included in your final report. Hennepin County (MN) presented key findings from Step 1 in their summary report and included more detailed findings in three appendices.

**Step 2. Chart Activities**  
(see Page 19 of Handbook)



The primary focus of this step is to improve when you implement intermittent activities. The computer-based tools offer a systematic framework for identifying activities, and a very convenient way to calculate, illustrate, and analyze the findings.

**Be Prepared for Some Confusion**

You will run into some confusion as you guide your team through this step. Getting a handle on what is an “intermittent activity” can be tricky and at times frustrating. Separating activities from tasks might be challenging. Here are some guidelines:

What is an Intermittent Activity?

- Intermittent activities need to occur at least weekly in order to make the charts in this step. A monthly staff meeting would not be included in this step.
- Continuous activities will be addressed in the next step, Coverage. Inmate health and welfare checks that occur at least every 30 minutes should be considered continuous for the purpose of this exercise. Inmate counts that happened four times a day would be considered intermittent.
- Activities must have specific start and ending times in order to be charted.
- Activities should have a significant effect on the facility. The effect may be localized or facility-wide or something in between.

Activity or Task?

- Finding the line between an intermittent activity and a task can be difficult. If the list of activities starts to get really long, you have probably wandered into task territory.
- Tasks will *tend* to be smaller, implemented more frequently on a shift, and involving only one employee.
- When in doubt, collect all of the potential activities and then look through the list and begin sorting activities and tasks. Keep the tasks, as they may be useful in later steps.

## Tips

- Harvest as many ideas as possible—you can sort them out later.
- When in doubt, include it. It can be deleted later.
- When you sort through the list of activities, save the list of items that did not make the cut. These will be helpful in later steps. Remember, *everything goes somewhere*.

## **Assigning Weights**

You should weight activities, because not all activities have the same effect on the facility. Use a scale of 1 to 3, with 3 being an activity with the most impact. We have found that using more than three values creates a cartoon-like series of activity graphs. By using a scale of 1 to 3, team consensus will be reached more easily—a 2 will have a greater impact than a 1, but less than a 3. Imagine trying to rate on a scale of 1 to 5.

When assigning weights, try to reach a consensus about your criteria for assigning a low, medium, or high weight. Some jurisdictions look at how much of the facility is involved in an activity; if it is localized to one area the weight is lower. Some look at the staff demands when assigning weight. Others look at the number of inmates involved. Any of these or all of these are acceptable as long as you apply the criteria consistently.

## **Using the Computer-Based Programs**

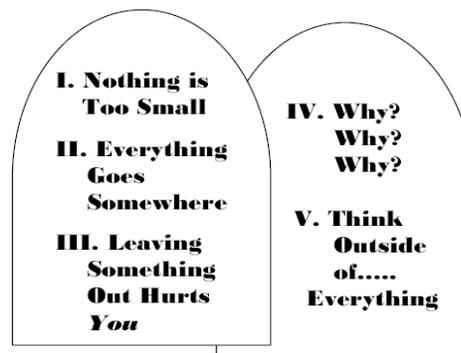
Appendix M describes several computer-based programs that have been developed to make it much easier to analyze and illustrate activities. Instructions for the various programs are provided in the appendix.

The Handbook explores the graphs that are generated and ways to work with the findings. Remember that there are several ways to make the activity schedule friendlier:

- Lower some of the highest short-term peaks
- Fill in some of the valleys
- Create a 30 or 60 minute peak that may be covered by overlapping shifts

Be sure to check for new additions to the toolkit frequently. As the computer tools are refined and expanded they will be added to the toolkit.

**Step 3: Develop a Coverage Plan**  
(see Page 24 of Handbook)



A coverage plan is the lynchpin of the staffing analysis process, and arguably, your jail operations.

A coverage plan describes the *net* numbers and types of employees who must be deployed at specific times in order to maintain safety and security and to implement policies and procedures. At the end of this step you will have a detailed “coverage plan” that describes:

- What type of employees are needed
- Where they are needed
- When are they needed

There are now three elements to the coverage plan. The Third Edition added the third category, “details,” to help you identify and quantify the wide range of ad hoc events that require staff time, but are not addressed by relieved posts or positions.

**Do a Quick Inventory of Your Practices**

Take a few minutes, with your team or on your own, to answer the following questions about your agency’s current practices and policies:

1. How do you describe the specific relieved posts and positions that must be operated in your facility?
2. What is your policy regarding filling all of the relieved posts and positions?
3. If there are circumstances under which not all are filled all the time—
  - a. How do you decide which are vacant and when?
  - b. Who has discretion to make these decisions?
4. When is the last time your agency revisited and revised these practices?

Coverage Plan? The first question attempts to identify something that is similar to a coverage plan—not a schedule, but a description of what posts and positions are to be filled for each day of the week. Many jails do not have a document like that; rather, coverage must be inferred from the schedule. But as you will see later, the number of scheduled employees is rarely the number of actual employees who report for duty.

Backfilled? The second question explores what happens when someone does not report for work when he/she is scheduled to fill a relieved post or position. One answer we frequently hear is, “It depends”. Some agencies have a strict policy of filling all relieved posts and positions and authorizing managers to force employees to work overtime as needed. Others leave those decisions to shift supervisors or other management. It is important to get the answers to this question on the table. If you have a document that was produced for supervisors to describe when they should call for overtime, this may be a good point starting point.

Discretion to Leave Post Unfilled. Some agencies have written policies and procedures that direct shift supervisors and other managers with regard to filling, or not filling, empty posts on a shift. Many agencies leave that decision up to a supervisory employee who is working the shift; often, these employees do not have direction regarding which to fill and which to leave vacant. This creates inconsistencies in practices from shift to shift, and leaves the agency wide open for liability.

Current policies? If your agency has not reviewed and revised the policies that are involved with filling relieved posts and positions, use the staffing analysis—and this step—to bring such critical directives up to date.

### **Think Outside the... Schedule**

You and your team will be asked to start with a blank piece of paper and draft a coverage plan an hour at a time. This is difficult, and you will find yourself frequently asking your team (and reminding yourself) that current shift configurations are not on the table in this step.

Schedules are a means to an end. They assign individual employees to work at specific times and days in order to meet coverage needs. But many agencies do not have a coverage plan and confuse the schedule with it.

There will a tendency during this step for your team to:

- Look at current coverage and/or schedules instead of re-thinking everything from the ground up.
- Think in blocks of 8 or 12 hours, because that’s the length of a shift.
- Limit their thinking to the start and end times of current shifts rather than letting the task dictate the time and duration of deployment.

Try putting it this way to your team: *In Step 2 we showed that the level of activity varies markedly from hour to hour; doesn’t it follow that coverage needs will vary as well?*

### **Everything Goes Somewhere—Three Types of Coverage**

The staffing analysis methodology centers on hours as the unit of measure. The goal is to anticipate all of the hours of employee time you will need in the next budget year and to

submit a budget request that will meet those needs. The budget request will be grounded on documentation that literally links every hour of work to every dollar of salary.

The coverage plan must include all of the hours that will be worked. You will use your past experience to project future needs. Be sure you explain the three coverage categories to your team:

- a. Relieved posts/positions--always staffed by an employee.
- b. Non-relieved positions--when the individual employee assigned to the position does not report for duty and the position is not filled by another.
- c. Details--intermittent and often unpredictable activities that demand employee time. These “details” vary from month to month, and year to year, but consume substantial amount of employee effort.
- d. Net Annual Work Hours (NAWH)—some of the tasks that are identified will be counted in Step 6, NAWH.

As you and your team work through this step, be sure not to lose any seemingly “stray” comments. If someone identifies an activity or task that requires employee time, find a place to count it in one of the three.

### **Remember NAWH Will Account for Some Hours**

You will need to be familiar enough with Step 6 to be able to guide your team during the coverage process. Be sure you have read that section of the Handbook and that you are aware of the NAWH elements that might be taken care of in coverage. The primary element that takes employees away from their posts will be staff training.

### **What About Breaks?**

Employee breaks should be addressed in the coverage plan. Some agencies try to include breaks in the NAWH calculations, but we counsel against that. Breaks are an activity that must be accommodated as part of the coverage plan.

### **Relieved Posts and Positions**

Most of the hours needed to operate the jail will fall into this category. Take your time with it. The Handbook describes a good process for drafting your coverage plan, and even has a photo of a team creating a plan. As your team makes decisions about coverage needs, record the decisions in the format shown in Figure A.10. This will make it easy to enter the information into the computer programs and generate spreadsheets and graphs.

**Figure A.10: Coverage Plan Form**

Code	Post or Description	Start Time (0000-2400)	End Time (0000-2400)	Employee Classification	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

The Handbook describes the relieved coverage process in detail and provides samples. The sample staffing analysis reports in the toolkit also contain sample coverage plans.

Each row in the coverage plan form represents one employee working a specific start and end time for the days that are checked. If you have two employees needed for the same times and days, use two lines. Again, the Handbook provides examples that will be helpful.

**This Is a Team Effort**

The best coverage plans are developed by a team of stakeholders, informed by the findings from Step 1 and Step 2. Figure 3.6 of the Handbook shows one such team working on a draft coverage plan with the floor plan for one level of the facility projected on the white board. The location of the posts are drawn on the floor plan as they are identified.

**Be Reasonable But Don’t Compromise Safety and Security**

You need to set the tone at the beginning of this step. Participants should be thorough and complete, but also reasonable about the cost of coverage levels. The objective is to find a balance between resources and operational needs. But do not let budget concerns keep you from developing a coverage plan that provides safety and security.

If participants understand that the sky is not the limit, but that safety and security will not be compromised, they will approach this task with an appropriate balance of priorities.

**Why? Why? Why?**

Train yourselves to challenge everything that goes onto the draft coverage plan:

- Ask “Why?” and don’t settle for “We’ve always done it that way”.
- Use a sharp pencil and define time frames precisely.

- Be sure that a coverage need is the right length—not a minute too long, but not a minute too short—nothing is too small to count in the coverage plan.
- Ask if there are other ways to implement a task or activity that would change coverage needs (see the Hennepin County medicine delivery example in the Handbook).

At first, this will be a pain in the neck, but soon all of your team members will get the idea and it will be a creative atmosphere. Be ready to consider a lot of changes that will improve your operations and efficiency.

### **b. Non-Relieved Posts and Positions**

The second element in Step 3 identifies the need for posts and positions that are not relieved when a designated employee does not report for work. For example, when the jail administrator is away at a meeting or out sick, no one steps into his/her position for the day. There are usually many such non-relieved positions, and sometimes posts, that must be identified.

The format shown in Figure A.10 may also be used for this step, although you will not need to enter into the Autopost program. Record each non-relieved position and post, identify the classification of employee, describe the hours worked and the corresponding days of the week.

*Why are non-relieved posts and positions excluded from the calculations we developed for relieved posts and positions?* Because you cannot be sure that a non-relieved employee will actually be present at any time on any given day. Non-relieved employees are not at work for a variety of unscheduled absences. When they do not report, no one steps in to take on their duties. Therefore, we do not want to consider them in the same way we have considered relieved posts and positions.

The non-relieved posts will go directly into budget calculations, as shown in Step 7. Relieved posts must be calculated using the NAWH methodology.

### **c. Details**

After you have finished the relieved and non-relieved needs, you need to wrack your brains (and research operations) to identify all of the activities that have not yet been considered. These are called “details,” as in: “We detailed two officers to take the inmate to the emergency room”.

*Details demand a response. When the needs arise, employees are assigned to meet the needs, for whatever duration is needed.* Details are often not flexible in timing, and many are emergencies. Sometimes you do not control the duration of details. When an officer is taken off the floor to immediately respond, and then backfill with overtime, the overtime hours need to be counted as details.

To estimate details you need to collect data on details that you have encountered in the past and analyze it for multiple years to identify trends. If inmate hospital security details have been steadily increasing, you should increase the number of hours for the next year to

anticipate a continuation of that trend.

The product of the coverage plan for details is an estimate of total hours needed, by classification of staff, for the next budget year. These hours will go directly into the budget as either overtime, part-time, or a combination of both.

To get this process started, ask your team to identify examples of details that occur in your facility. Make a list and then look at the lists in the Handbook and in the sample reports. Add to your list as needed. Due to the often unplanned nature of many of these “details”, you may not be able to quantify exactly how many hours you may need. When this happens, use past experience and data as a starting point.

Discuss where you will be able to find data, or at least information, about the number of hours each type of detail has demanded in recent years. If you cannot find data, you will have to estimate this time. Whenever you do not find data that you need, be sure to create a protocol to begin collecting it. That way, you will have it in subsequent years.

### **Don't Rush**

This step offers the greatest opportunity to improve jail operations. Do not rush through it, and do not be afraid to explore a wide range of alternatives.

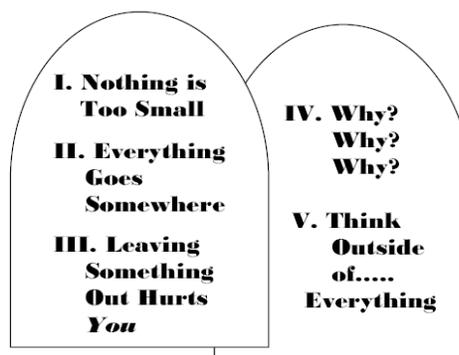
If you identify changes in operations that may be implemented now, go ahead with them. Adjust your coverage plan accordingly.

Discussions in this step might take you back to previous steps. You may decide to change the timing of an intermittent activity in order to streamline coverage needs. Great! Do it, go back and change the activities data, and move on.

### **Document Your Improvements**

Whenever you find ways to “work smarter” and be more efficient, record them on a running list. The list will become part of your report, giving you and your team credit for finding ways to improve the jail.

## Step 4: Evaluate the Coverage Plan (see Page 36 of Handbook)



The products from Step 3 are *drafts* that need to be thoroughly reviewed and evaluated to ensure that nothing has been omitted.

### Opportunities to Participate

This is the time to ensure that everyone has a chance to review the draft and offer comments and suggestions. Although not everyone will choose to participate, give them the opportunity by:

- Posting the plan for review and comment
- Emailing it to employees and other stakeholders
- Holding small meetings to let stakeholders examine the plan
- Discussing the plan at staff briefings
- And other means to offer stakeholders an opportunity to participate

Allow time for the reviews and be sure to thank all those who contribute their thoughts.

### Complete and Balanced

After an initial coverage plan has been developed, it must be reviewed and evaluated to determine whether it:

- Meets the needs of the jail
- Is achievable
- Is affordable, and
- Is sustainable

A balanced coverage plan is one that does not compromise safety and security, but is also reasonable and sustainable in light of local resources.

## **If the Coverage Plan Is Deficient, the Budget and Operations Will be Too**

The coverage plan is the foundation on which operations, schedules, and budgets are based. If something is missing in the coverage plan, it will be missing when it comes time to operate the jail.

### **The Equalizer**

The NIC staffing analysis methodology is designed to empower agencies to conduct their own analysis without relying on outside experts. This step in the process ensures that everything has been considered and that the coverage plan meets a range of criteria.

What you and your colleagues do in this step is similar to the evaluation that a so-called expert is conducting in his/her head. But this approach uses:

### **Evaluative Tools**

The Handbook describes the evaluation process and identifies a range of tools and techniques that will subject the draft coverage plan to rigorous and systematic review. It also provides lists that will be useful. It provides samples of evaluative findings and explores the computer-based tools that make it easy to compare activities to coverage.

As you and your team work through the evaluative process, you need to be sure that they are considering a full range of situations:

- At all times?
- For every type of prisoner?
- In all areas of the facility?

The evaluation tools examine the draft coverage plan from many angles:

- Part 1 addresses internal consistency and plan efficiency.
- Part 2 asks key questions concerning coverage.
- Part 3 provides a method to assess operational adequacy.
- Part 4 raises standard compliance issues.
- Part 5 evaluates provisions for “backup.”
- Part 6 suggests ways to secure broader review and comment.
- Part 7 provides a summary chart for problems and an aid to diagnose the appropriate responses.

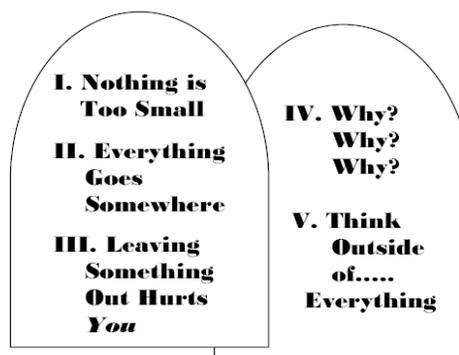
When the evaluation identifies problems or deficiencies, go back to previous steps as needed. Responding to identified deficiencies often demands a wider range of changes than simply allocating more staff.

Record all changes made during this process, including changes in the jail setting (operations, facility).

Be cautious, as the changes made in response to a deficiency may create other problems. Evaluate revised plans thoroughly.

Continue with the evaluate-revise-evaluate loop until an evaluation of the staffing plan yields satisfactory results for every jail component.

**Step 5: Developing Schedules and  
Evaluating Efficiency**  
(see Page 43 of Handbook)



The Handbook explores issues and opportunities associated with schedules in detail. Aids are provided in the computer-based tools.

As project manager, you do not need to become an expert on schedules and scheduling. Neither will all of the members of your team. You will need to find the person or persons who understand scheduling in your agency and bring them into the process at this point.

While the technical aspects of schedules may be left to one or two persons, a wide range of stakeholders need to be able to voice their opinions about the attributes of a good schedule.

Remember that a schedule is a means to an end. It assigns individual employees in an effort to “net” the numbers and types of employees specified in the coverage plan— at all times.

Brush up on your terminology before you start this step. Help your team understand that what they might call a “schedule” is actually a “shift configuration”. The focus of this step will be the latter—finding one or more configurations that implement the coverage plan efficiently, while also addressing other objectives. In the Handbook we use the term schedule because it is more easily understood.

### **Evaluating Schedules**

The Handbook describes five considerations that may be used to evaluate various schedules to find the best fit:

1. Sufficient
2. Efficient
3. Consistent
4. Attractive
5. Healthy

A schedule is sufficient if it provides at least as many staff for each hour of the day that has been determined in the coverage plan. It must also provide the right type of staff, working within their grade, and who are properly trained (certified) to do what is asked of them.

An efficient schedule minimizes the number of “extra” staff deployed above the coverage plan. Few agencies can afford to waste employee hours by exceeding the needs of the coverage plan. For every hour that a staff member works above coverage needs, that hour is

no longer available (from a budget standpoint) to be used to meet coverage needs at regular pay. The computer-based tools allow you to compare your current schedule, or schedules that you are considering, against the coverage plan and even calculate the degree of sufficiency and efficiency.

An attractive schedule is perceived by employees to meet their needs and consider their personal preferences. Your agency's employees will need to define what they consider attractive. Understanding what is important to employees when it comes to scheduling may have a very positive effect on staff turnover. Some of the schedule characteristics that may be important to employees include:

- Length of work day
- Number of days worked
- Shift worked/time of day
- Days off/weekends off
- Consistency from week to week with days off
- Consistency from week to week with work hours
- Ability to use earned time off

Don't make assumptions about what employees value and find attractive. Survey them, or provide other opportunities for them to convey their preferences. Don't be surprised if the employees do not agree among themselves though.

Some schedules are healthier than others. Some of the factors that contribute to the health of a schedule include:

- Number of hours worked consecutively
- Number of days working long shifts
- Providing insufficient time between shifts to rest
- Changing work hours frequently (rotating from days to evenings to nights)
- Posing a higher likelihood that staff will be required to work overtime

Appendix K summarizes research findings about the health implications of "shift work". Be sure that you and your colleagues understand the facts instead of the myths regarding the research.

Is the schedule fair? This question is often voiced, but you will find that the definition of fair will vary depending on the stakeholder group.

## **Schedules Are Important to Employees**

Do not underestimate the importance of scheduling decisions to employees. Employee morale can be shattered by changes in schedules, especially if the employees did not have a voice. It may be helpful to survey employees about their scheduling preferences and concerns. While you are at it, there are other questions that would be helpful to pose. Sample employee surveys are available through the NIC Information Center.

## **Reaching a Consensus About Criteria for Schedules**

Help your team and the stakeholders to reach a consensus about the attributes of a good schedule. This will not be easy, because the priorities of different stakeholders will sometimes clash. Form 4A offers a strategy and format to find common ground between stakeholders by:

1. Having the team, and possibly additional stakeholders, identify all of the attributes that are important to participants and their colleagues.
2. Having the team agree on a weighting scheme that adds up to 100 points. The attributes with the highest possible score should be those that are most important to the team.
3. Letting the group score prospective schedules together, agreeing on the number of points to award for each evaluative element.

## **Be Cautious Before You Make Any Changes**

Employees should have ample opportunity to contribute to the discussion of revised schedules. As decisions are made, be sure to give employees plenty of notice before they are implemented so that they may adjust their personal lives to accommodate the new schedule. Done properly, changes in schedules may result in:

- Improved staff morale as job satisfaction increases.
- Less turnover, less sick time, and improved quality and quantity of work.
- Financial savings due to the efficient use of staff.

## FORM 4A: EVALUATING SHIFT CONFIGURATIONS

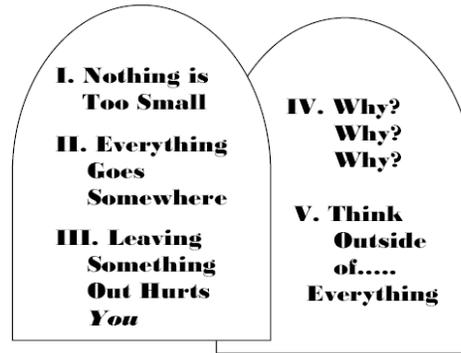
Name of Configuration: \_\_\_\_\_ Date of Evaluation: \_\_\_\_\_

Instructions:

4. As a team, identify all of the attributes that are important to participants and their colleagues. Add as needed to the list below, delete as appropriate.
5. Agree on a weighting scheme that adds up to 100. This will not be easy. The attributes with the highest possible score should be those that are most important to the team.
6. Fill out a form for each shift configuration that is being considered. Agree on the scoring. This might not be easy, either.
7. Compare the total scores as well as the scoring patterns for all options.
8. Discuss, and remember that a combination of configurations might work best.

ATTRIBUTE	Description	Possible Score	Score
<i>SUFFICIENT</i>	Providing at least as many staff for each hour of each day that has been determined in the coverage plan (and the right <i>type</i> of staff).		
<i>EFFICIENT</i>	Minimizing the number of “extra” staff deployed by the schedule (“extra” staff are the ones scheduled to work above the number required by the coverage plan).		
<i>CONSISTENT</i>	Minimizing variations throughout the schedule cycle.		
<i>ATTRACTIVE</i>	Attractive to employees by meeting their needs, being considerate of their personal preferences, and offering incentives to stay with the organization.		
<i>HEALTHY</i>	Promoting staff physical well-being and performance.		
<i>FAIR</i>	Treating all employees fairly. Rewarding longevity, within limits.		
_____			
_____			
_____			
	<b>TOTALS.....</b>	<b>100</b>	

**Step 6: Calculate Net Annual Work Hours (NAWH)**  
(see Page 64 of Handbook)



By the time you get to Step 6, most of the work should be nearly complete. In Part I of this workbook we recommended starting this step at the outset to ensure that the data and information would be available when needed.

The Handbook and appendices provide a great deal of guidance for completing this step.

Most of the work on this step will be implemented by a few people who have access to the needed information and data. This step will intersect with human resources, employee time records, and other facets of personnel management. It will also need input from jail personnel with regard to training, overtime, and other operational insights.

While the number of persons who will have a hands-on role is limited, there is still a need for a wide range of stakeholders to provide insights. As you develop the list of categories that take relieved employees away from their scheduled posts, you should seek input from various jail personnel, from line staff up through administrators. Ask them to review the list and identify additional elements to be researched.

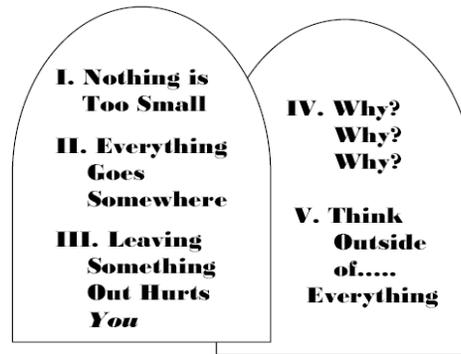
This is one of the steps in which “leaving something out hurts you”. Every item that is overlooked in the NAWH calculations means that you are overestimating the number of hours an employee delivers on post each year.

Be sure to:

- Determine NAWH for all job classifications
- Collect all leave categories and every reason that employees are unavailable to work scheduled shifts
- Use hours instead of days or shifts as the unit of measure
- Collect at least three years of data
- Use actual time off taken data

The first time you calculate NAWH may be difficult because of lack of data. Whenever you hit a dead end on a data element, create a protocol and start collecting it for use next year.

**Step 7: Prepare a Budget**  
(see Page 75 of Handbook)



As you progress through the nine steps you may notice that the number of persons involved with a step decreases. The broader-based work completed in the first five steps produced data, information and insights that are now used to implement technical tasks.

The Handbook describes the process of calculating staffing costs using the coverage plan, schedule, and NAWH.

**Share the Product**

Although only a few stakeholders are involved with preparing the budget, sharing the budget with the broader group will keep them apprised and invested in the staffing analysis process.

**An Estimate of Future Needs**

Remember that the budget is an estimate of what will be needed in the next fiscal year. The staffing analysis process effectively informs the budget in great detail. The historic data is a great starting point, but it is important that you take that data and then look at factors that will either increase or decrease the anticipated use of leave time in the future. For instance, when National Guard units began to be deployed, it had a major effect in many jails on the amount of military leave used. Conversely, if you are anticipating a number of retirements, you may conclude that those individuals earned and ultimately used more leave time than the new employees who replace them will use.

**Improved Accuracy and Accountability**

One of the largest jail systems in the country was asked by its parent budget office to explain where all the staff hours were going. Having completed several steps of the staffing analysis, it required only a few hours to assemble the coverage plans for each facility.

The staffing analysis process allows you to draw a straight line between every dollar in the personnel budget and every hour worked in the jail. This level of proof and accountability increases the credibility of the budget.

## **Finding a Balance Between Regular Hours and Overtime Hours**

Remember that the budget is used to pay for hours of employee time. The total coverage hours needed to operate the jail will be funded in three ways:

- *Authorized employee positions* produce regular hours that are worked by each employee
- *Overtime allocations* pay for additional hours worked by regular employees, by the hour
- *Part-time employees* (if applicable) provide regular hours as needed, as an alternative to overtime

Every jail budget needs an allocation for overtime (or overtime and part time). It is not possible to operate the jail without overtime.

There is no formula or rule of thumb to help you determine how many of the annual coverage hours should be budgeted for authorized positions and how many should be funded by allocations for overtime and part-time. The staffing analysis process will improve your ability to monitor the use of overtime and to do a better job of predicting needs in the next budget year. Over time, the appropriate mix of overtime and regular hours will come into focus.

## **Earlier Participation Will Yield Benefits Now**

If budget officials and policymakers such as county commissioners or city councilors have been involved in the preceding steps, they have watched the staffing analysis process move from step to step. They have had the opportunity to question the assumptions, methodology, and findings at each step in the process. By the time the budget is drafted, they understand the basis on which the budget is being drafted.

## **Organizing the Report**

The Handbook explores various strategies for organizing the report. A sample outline is provided. The toolkit has several final staffing analysis reports that you should examine.

Draw from all of these sources to design a report that does justice to all of your work and speaks clearly to your audience.

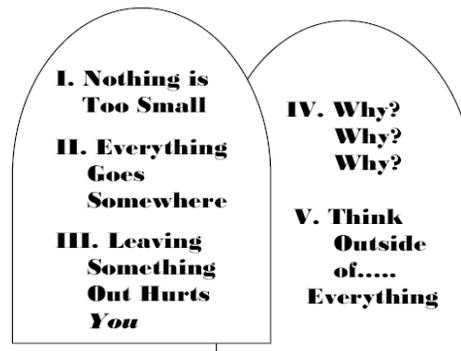
## **Nothing Up My Sleeve**

The staffing analysis process has been implemented in a public way and the report should continue in that spirit. Provide the information that skeptics might need to be convinced in the accuracy of the findings.

## **Share**

Be sure the report is shared, in some form, with everyone who contributed to the project. Better yet, send a draft to them and invite their comments and suggestions before you finalize the report.

**Step 9: Implement the Plan and Monitor the Results**  
(see Page 79 of Handbook)



The report has been submitted, the budget has been set, and now it's time to implement the staffing plan.

**What If You Don't Have What You Need?**

The staffing analysis process was systematic and measured. The findings describe the staffing resources you need to operate a safe and secure facility and implement policies.

Sometimes you do not get what you asked for, such as:

- The budget request was cut
- The budget was approved but a hiring freeze is put in place
- You are unable to keep authorized positions filled
- Employees are unwilling to work the number of overtime hours you need

Whatever the cause of the shortfall, the bottom line for jail managers is that you do not have the staffing resources you need to “do everything” that was planned for in the staffing analysis process.

**Matching Operations with Resources**

It does not make sense to attempt to implement all activities and policies that were anticipated in the staffing plan if you do not have sufficient resources. But jail managers frequently attempt to do just that. We believe that the jail profession is especially gifted at trying to do more with less. It is an admirable trait, but it may lead to dangerous situations.

A large jail in the southwest was seriously understaffed. One Sunday afternoon, nearly half of the scheduled employees did not report for work. The shift supervisor had to operate the facility with half of the staffing resources that were needed, according to the staffing plan. At a staff meeting the next day, the supervisor said, “Yes, we were really short, but we got it all done anyway—visiting, recreation and more”. The supervisor's colleagues responded by asking, “But was it safe?” The supervisor quickly admitted that by attempting to do

everything in spite of a serious shortage of staffing resources, facility safety and security was compromised.

Some jails have contingency plans that predetermine the manner in which jail operations are decreased in response to staffing shortfalls. Such policies acknowledge the reality of empty posts and prescribe changes in operations in advance, rather than leaving it to the discretion of supervisors.

When the dust settles and your staffing resources are known, take some time to consider how much you should attempt to accomplish when staffing resources are lower than needed. It is a tough situation for jail managers, but one that needs to be carefully considered and a good coverage plan is the place to begin this examination.

### **Implementation and Monitoring**

The Handbook describes implementation and monitoring strategies and identifies resources that will be helpful.

The jail setting is dynamic; change is constant. It is important to continuously monitor the staffing plan and its effectiveness and to make adjustments as warranted. Involve stakeholders in the monitoring process and invite them to make suggestions for improvements.



## **APPENDIX B: The Myth of Staffing Ratios**

Using a staffing ratio to compare one facility with another or to determine a staffing level for a facility produces inaccurate results.

Many factors differ and cannot be accurately compared:

- Is the number of inmates used for the calculation the actual number, or the rated capacity of the facility?
- Which positions go into the calculation—security only, or all positions?
- Are contractual employees considered?
- Are hours worked by part-time employees considered?
- Are hours worked by full-time staff as overtime considered?
- Are some staff (such as maintenance or nursing) supplied by other county agencies (such as public works or public health)?

In addition to these factors, the characteristics of each jail need to be considered before applying figures from one facility to another:

- Type of inmates housed (level of security, gender, age, etc.).
- Design capacity versus actual population.
- Activities and programs, such as work release, work programs, education.
- Facility design.
- Facility condition.
- Staff qualifications and experience.

Staffing is based on operational philosophy and facility design. The most efficient staffing is possible when a facility is designed based on an operational philosophy. A facility with a program-oriented philosophy will have counselors, program, and recreation staff, in addition to custody and security staff.

A facility with a philosophy of “warehousing” inmates may have only custody and security staff. If a facility’s design is inadequate for its philosophy, staff may be used to compensate for facility shortcomings.

Many design and operational factors will affect staffing, including—

- Whether the facility is designed for direct supervision, indirect supervision, or intermittent supervision.
- The types and size of housing units (cells versus dormitories).
- Facility sightlines.
- The types of security control systems and security perimeter.
- Whether inmates are escorted through the corridors.
- Whether programs and services are centralized or decentralized.
- Whether the facility is single-story or high-rise.

- Whether acceptable backup is available.

If people say they can build a 250-bed facility and already know how many staff it will take to operate it, do not believe them. Until a facility is adapted to the unique population and practices of a locality, staffing cannot be accurately determined.

Forget the words “staff-to-inmate ratios”; they only confuse the issues.

## APPENDIX C: More on Net Annual Work Hours (NAWH)

### Comparing NAWH and “Relief Factor” Calculations

Some jurisdictions still use the relief factor methodology, and need to be able to convert NAWH to RF for comparison purposes. Similarly, those who have converted to NAWH may need to compare previous RF calculations with their newer NAWH findings.

**Table C-1: Comparing NAWH and Relief Factors**

	<b>Relief Factor (RF)</b>	<b>Net Annual Work Hours (NAWH)</b>
<b>Unit of Measure</b>	Days	Hours
<b>Changes with shift configuration?</b>	Yes, a new RF must be calculated for each different shift length	No, applies to all shift configurations
<b>Number of “Time Off” Deductions Typically Considered</b>	8 to 10 categories, measured in days	15 and more, in some agencies more than 30 categories of deduction are included, measured in hours
<b>Product of the calculation</b>	A number that describes the number of full-time employees needed to cover a specific shift with relief	The number of hours that each classification of employee is actually available to work his/her post annually
<b>Uses</b>	Calculates numbers of FTEs needed for a post/position	(1) Defines FTE for each classification of employee (2) Used as a denominator to determine FTEs needed for varied coverage patterns (3) Provides guidance for shift construction and employee assignment

Remember, either methodology is only used when a post or position is relieved. Relief means that a post or position is filled by another employee when the primary person assigned to it is not able to work. Relief sometimes implies that a post or position is staffed every day of the week. Relief is synonymous with “continuous.”

When a post or position is relieved, it is important, and difficult, to determine what budget resources are needed to staff it.

## **Definitions**

A "relief factor" attempts to answer the question: "How many full-time staff must I have in my budget to provide continuous coverage for a relieved post, using a specific shift configuration (length of shift)?" Relief factors are usually calculated for posts that are operated 24 hours daily, every day of the year. But calculating a relief factor becomes very difficult, and less accurate, when a variety of post configurations are considered. Some posts operate for only part of the 24-hour day, and some posts are not operated every day of the week.

In the past, a typical jail had only one shift configuration, such as 5, 8-hour shifts. But we have found that one size does not fit all, and the modern jail typically uses a variety of shift configurations to efficiently address needs. Using a relief factor in this context is often confusing—and inaccurate. A case in point: one county recently concluded it only required 4.1 full-time positions to staff 2, 12-hour shifts, 365 days per year (in fact, they needed 5.48). They made math errors when they tried to adapt their old shift relief factor (derived from 8-hour shifts) to their new 12-hour shifts. This is a common error made as managers try to apply relief factor methodology to alternative shift patterns.

The NAWH method introduced in the NIC Workbook accomplishes the same goals, more accurately, and with much more flexibility. By focusing on the "hour" as the unit to be measured, rather than a shift or a day, the process has been improved. The NAWH methodology also yields a product that is versatile and is effectively used in other areas of the staffing analysis.

## **What Do These Calculations Tell Us?**

As suggested in Figure 1, a Relief Factor is a number that represents the number of full-time employees needed to provide coverage for a specific relieved post or position. An RF calculated for an 8-hour shift does not apply to any other length of shift. Every time the shift configuration changes, the RF must be recalculated—leading to more opportunities for error. The RF calculations are based on the number of "days" a typical employee has off for leave, training, and other activities.

The NAWH expresses the number of hours an average employee in a classification (such as Correctional Officer) will actually report for deployment during the year. It is the "net" number of hours that the employee is available to work. The NAWH calculations are based on the number of hours employees are away from their posts with pay. One agency with which we worked recently was able to provide data for more than 30 distinct categories of time away from post, thanks to the efforts of their payroll and human resources colleagues. The more data available, the more accurate the result.

The NAWH figure represents a "full time equivalent" (FTE). An FTE in budgeting jargon refers to the equivalent number of hours worked by a full-time employee for each classification of employee.

## Why are these numbers so important?

At first glance, these calculations seem to only have relevance to the budget process. That’s true. But the budget is the source of all of our staffing resources—full-time employees, part-time employees, and overtime. If you do not ask for sufficient resources at the beginning of each budget year, you will certainly run short before the year ends. Further, if you want to increase training, for example, you will need to adjust the NAWH to ensure that funds are requested. And securing approval for your budget request will be bolstered by the comprehensive and accurate NIC methodology. The budget director in a large jail system recently asked for a “chain of evidence” that tied each dollar in the staffing budget request, to the hours and posts worked in each facility. The NIC process easily provided that level of detail, and connected the coverage needs to scheduling, and eventually to the budget request.

## How do I convert and compare?

To compare NAWH and RF, you must be able to convert one to the other. Table C-2 provides a sample of the results when NAWH is converted to SRF and RF.

**Table C-2: Example of Net Annual Work Hours (NAWH) Compared to “Shift Relief Factor” (SRF) and “Relief Factor” (RF)**

A	B	C	D	E	F
Annual Coverage Hours	Number of hours in a single shift	NAWH	SRF for 1 shift (A ÷ C)	Number of Shifts in 24 Hours	RF for 24hr coverage
<b>2,920 hours</b> (8 hours times 365 days)	<b>8</b>	1,550	<b>1.88</b>	<b>3 shifts in 24 hours</b>	<b>5.65</b>
	<b>8</b>	1,600	<b>1.83</b>		<b>5.48</b>
	<b>8</b>	1,650	<b>1.77</b>	<b>2 shifts in 24 hours</b>	<b>5.31</b>
	<b>8</b>	1,700	<b>1.72</b>		<b>5.15</b>
<b>4,380 hours</b> (12 hours times 365 days)	<b>8</b>	1,750	<b>1.67</b>		<b>5.01</b>
	<b>12</b>	1,550	<b>2.83</b>	<b>2 shifts in 24 hours</b>	<b>5.65</b>
	<b>12</b>	1,600	<b>2.74</b>		<b>5.48</b>
	<b>12</b>	1,650	<b>2.65</b>		<b>5.31</b>
	<b>12</b>	1,700	<b>2.58</b>		<b>5.15</b>
	<b>12</b>	1,750	<b>2.50</b>		<b>5.01</b>

Why would the RF for the two examples (column F) be the same? Does this mean that an 8-hour shift and a 12-hour shift have the same relief factor? Only if they have the same *Net Annual Work Hours*, which is usually not the case because employees who work 12-hour shifts usually work 84 hours in a 14-day pay period, while their 8-hour counterparts work only 80 hours.

The formula is shown in Table C-3.

**Table C-3: Calculating Relief and Shift Relief Factors for 7 Day Posts**

Type of Factor to Be Calculated	Formula
<b>1 shift operated 7 days/week</b>	$\frac{\text{Annual Coverage Hours}}{\text{Net Annual Work Hours}} = \text{“Shift Relief Factor” (SRF) for 1 shift}$
<b>24 hour coverage 7 days/week</b>	$\text{SRF for 1 Shift} \times \text{Number of Shifts in 24 hours} = \text{“Relief Factor” (RF) for 24 Hours}$

What if you are not covering 7 days per week? It is a little more complicated, but again, the NAWH figure is the key. You will need to calculate the annual scheduled hours, using the following formula:

$$\text{Number of Hours in Shift} \times \text{Number of Days/Week} \times 52.14 \text{ weeks} = \text{Annual Coverage Hours}$$

For example, a relieved post that operates 8 hours per day, 5 days per week, would require 2,086 annual coverage hours:

$$8 \text{ hours} \times 5 \text{ days} \times 52.14 \text{ weeks} = 2,086 \text{ annual coverage hours}$$

To calculate the shift relief factor:

$$\text{Annual Coverage Hours} \textit{ divided by } \text{NAWH} = \text{Shift Relief Factor}$$

For example, the 8 hour shift operated 5 days per week in the preceding example, for a classification of employee that has a NAWH of 1,550, would have a Shift Relief Factor of 1.35:

$$2,086 \text{ annual coverage hours} \textit{ divided by } 1,550 \text{ NAWH} = 1.35 \text{ SRF}$$

## APPENDIX D: Jail Staffing and the Federal Courts

Court decisions define important parameters for jail operations by establishing minimum levels of service, performance objectives, prohibited practices, and specific required practices. We explore federal court decisions in this appendix, but we note that state and local courts also play an active role in evaluating and guiding jail operations.

Decisions handed down by federal courts have required jails to:

- Protect inmates from themselves, other inmates, staff, and other threats
- Maintain communication with inmates and regularly visit occupied areas
- Respond to inmate calls for assistance
- Classify and separate inmates
- Ensure the safety of staff and inmates at all times
- Make special provisions for processing and supervising female inmates
- Deliver all required inmate activities, services, and programs (medical, exercise, visits, etc.)
- Provide properly trained staff

Federal court involvement with jails goes back more than 40 years. State and federal prisons were the focus of many landmark cases in this era, and local jails soon became targets as well. Early federal decisions tackled fundamental constitutional issues in jails. Many of these pioneering decisions are still cited in current litigation.

### **Courts view staffing levels and practices as central to the constitutional duty to protect**

The United States Constitution imposes an extraordinary duty to protect on jails that has no counterpart in the public safety.<sup>1</sup> While our duty is less visible to the public, and likely less appreciated, it rises above the constitutional responsibilities of our public safety colleagues. Even probation does not approach the duty to protect that is imposed on jails. Probation officials are not held responsible for the behavior of offenders under their supervision, nor for what happens to the offenders when they are not actually with a probation officer.

Do citizens have a *constitutional* right to be protected from crime or to have a fire extinguished? No, these are services that government *chooses* to provide. Whether or not to provide these services, and the level of service that are delivered, are discretionary decisions, from a constitutional perspective. To be sure, it is politically expedient to

---

<sup>1</sup> When fire, police and other public safety personnel provide services, the Constitution certainly comes into play, establishing many requirements for the manner in which services are delivered. But in these cases, the duty to protect commences when officials decide to act.

provide fire and police protection. Because such services are discretionary, officials may vary staffing levels in response to temporary or long term staff shortages.<sup>2</sup>

But a jail's duty to protect is constant, beginning when an inmate is admitted and continuing until release. Case law clearly establishes the responsibility of jail officials to protect inmates from a "risk of serious harm" at all times, and from all types of harm-- from others, from themselves, from the jail setting, from disease, and more.

Because our duty to protect is constant and mandated, we do not have the option to lower our level of care just because we do not have enough staff. If a shift supervisor leaves a needed post vacant because there are not enough employees to staff all posts, he/she increases risk and exposes the agency and government to higher levels of liability.

### **Duty to Protect**

In an early federal district court case in Pulaski County, Arkansas, the court described the fundamental expectations that detainees have while confined:

*...minimally, a detainee ought to have the reasonable expectation that he would survive his period of detainment with his life; that he would not be assaulted, abused or molested during his detainment; and that his physical and mental health would be reasonably protected during this period... Hamilton v. Love, 328 F.Supp. 1182 (D.Ark. 1971).*

In a Colorado case<sup>3</sup>, the federal appeals court held that a prisoner has a right to be reasonably protected from constant threats of violence and sexual assaults from other inmates, and that the failure to provide an adequate level of security staffing, which may significantly reduce the risk of such violence and assaults, constitutes deliberate indifference to the legitimate safety needs of prisoners.

### **Staffing Levels**

The first Pulaski County case produced continuing federal court involvement with jail operations. When the county was brought back to court by inmates in 1973, the county asked the court to consider their plans to build a new jail. But the judge held that, while the plans are promising, current conditions must be addressed:

*This Court can only deal with present realities....The most serious and patent defects in the present operation result directly from inadequate staffing. Hamilton v. Love, 358 F.Supp. 338 (D.Ark. 1973).*

A federal district court judge linked Platte County (Missouri) Jail's duty to protect to

---

<sup>2</sup> While the constitution does not mandate such services, state law, local ordinances, local policies and procedures, and even union contracts, might create requirements for staffing levels or patterns.

<sup>3</sup> *Ramos v. Lamm*, 639 F.2d 559 (10<sup>th</sup> Cir. 1980).

staffing levels:

*There shall be adequate correctional staff on duty to protect against assaults of all types by detainees upon other detainees. Ahrens v. Thomas, 434 F.Supp. 873 (D.Mo. 1977).*

In New Jersey, the federal district court required county officials to obtain an independent, professional staffing analysis addressing security staffing and training, classification, and inmate activities. The court set expectations for the plan and ordered the county to *implement* the plan:

*The staffing analysis shall review current authorized staffing, vacancies, position descriptions, salaries, classification, and workload...[The county] must implement the plan... Essex County Jail Annex Inmates v. Treffinger, 18 F.Supp.2d 445 (D.N.J. 1998).*

### **Liability**

Officials may be found to be “deliberately indifferent” if they fail to address a known risk of serious harm, or even if they *should* have known of the risk. Ignorance is not a defense.

Failure to protect inmates may result in liability. Usually court intervention takes the form of orders that restrict or direct jail practices. Sometimes the courts award compensatory damages to make reparations to the plaintiffs. In more extreme situations, defendant agencies may be ordered to pay punitive damages. A U.S. Supreme Court decision held that punitive damages may even be assessed against individual defendants when indifference is demonstrated:

*A jury may be permitted to assess punitive damages in a § 1983 action when the defendant's conduct involves reckless or callous indifference to the plaintiff's federally protected rights. Smith v. Wade, 103 S.Ct. 1625 (1983)*

### **Court Intervention**

Most court decisions produce changes in jail conditions, including operations. Continuing court involvement might be prompted by a consent agreement between the parties, or by failure of the defendants to comply with court orders. The nature of court involvement may even include the review of facility plans. In a New Mexico case, the court renewed its involvement when plans to reduce staffing were challenged by the plaintiffs. The court prevented the state from reducing staffing levels at several correctional facilities:

*..defendants will be enjoined from...reducing the authorized or approved complement of security staff...unless the minimal staffing levels identified as being necessary to provide a constitutional level of safety and security for prisoners have been achieved.. The Court also will enjoin defendants to fill*

*existing vacancies and thus to employ at least the number of medical and mental health staff as well as the number of security staff authorized to be employed.. during Fiscal Year... Duran v. Anaya, 642 F.Supp. 510 (D.N.M. 1986).*

### **Connecting Staffing Practices to Other Conditions**

In the New Mexico case, the court went on to draw links between staffing levels and other aspects of facility operations, ranging from overtime to inmate idleness:

**Overtime** “..security staff will be adversely affected by excessive overtime work as a result of the understaffing of the institutions subject to the Court's orders in this litigation”

**Out of Cell Opportunity** “...In addition, prisoners will be required to remain in their housing units for longer periods of time, and inmate idleness will increase.”

**Idleness.** “Prisoner idleness...will increase as a result of staff reductions...”

**Programs and Activities.** “There is a direct, inverse correlation between the incidence of acts and threats of violence by and between inmates, on the one hand, and the types and amounts of educational, recreational, work and other programs available to inmates, on the other--i.e., acts and threats of violence tend to decrease as program availability and activity increase.”

**Training.** “Reduction in security staff positions will prevent...complying with staff training requirements of the Court's order...”

The court noted concerns by a security expert that the “*security staff reductions that are contemplated will result in a ‘scenario at this time...very similar to the scenario that occurred prior to the 1980 disturbance’*”, referring to the deadly inmate riot at the New Mexico Penitentiary that claimed 33 inmate lives and injured more than 100 inmates and 7 officers.

### **Lack of funds is not an excuse**

Federal courts have made it clear that **lack of funds does not excuse violation of inmates’ constitutional rights:**

*Humane considerations and constitutional requirements are not, in this day, to be measured or limited by dollar considerations... Jackson v. Bishop, 404 F.2d 571 580 (8th Cir.1968)*

Courts may even restrict a jurisdiction’s discretion with regard to where funds are found to make needed improvements. An appeals court held that it may restrict the sources from which monies are to be paid or transferred in order to protect the legal rights of those who

have been victims of unconstitutional conduct.<sup>4</sup> In a 1977 decision,<sup>5</sup> Supreme Court Justice Powell observed: *...a federal court's order that a State pay un-appropriated funds to a locality would raise the gravest constitutional issues... But here, in a finding no longer subject to review, the State has been adjudged a participant in the constitutional violations, and the State therefore may be ordered to participate prospectively in a remedy otherwise appropriate.*

The Indianapolis case (see Footnote 3) concluded:

*It is not the province of a federal court to instruct the legislature on how it should finance its obligations. The district court did not attempt to do so. The court did what was within its authority--order a wrongdoer to pay the cost of remedying its wrongdoing*

### **Recent Federal Cases**

Although the basic tenets of federal court involvement with jail staffing and operations were forged many years ago, the practice has not ended, as suggested in these more recent cases:

*Cavalieri v. Shepard*, 321 F.3d 616 (7th Cir. 2003). The court noted that the detainee's right to be free from deliberate indifference to the risk that he would attempt suicide was clearly established.

*Wever v. Lincoln County, Nebraska*, 388 F.3d 601 (8<sup>th</sup> Cir. 2004). The court held that the arrestee had a clearly established Fourteenth Amendment right to be protected from the known risks of suicide.

*Estate of Adbollahi v. County of Sacramento*, 405 F.Supp.2d 1194 (E.D.Cal. 2005). The court held that summary judgment was precluded by material issues of fact as to whether the county knowingly established a policy of providing an inadequate number of cell inspections and of falsifying logs showing completion of cell inspections, creating a substantial risk of harm to suicide-prone cell occupants.

*Hearns v. Terhune*, 413 F.3d 1036 (9th Cir. 2005). The court held that the inmate's allegations stated a claim that prison officials failed to protect him from attacks by other inmates. The inmate alleged that an officer was not present when he was attacked even though inmates were not allowed in the chapel without supervision.

*Velez v. Johnson*, 395 F.3d 732 (7<sup>th</sup> Cir. 2005). The court held that the detainee had a clearly established Fourteenth Amendment right to be free from the officer's deliberate indifference to an assault by another inmate.

---

<sup>4</sup> *United States v. Board of School Commissioners of City of Indianapolis*, 677 F.2d 1185 (7th Cir.1982).

<sup>5</sup> *Milliken v. Bradley*, 433 U.S. 267 (1977).

*Smith v. Brevard County*, 461 F.Supp.2d 1243 (M.D.Fla. 2006). Violation of the detainee's constitutional rights was the result of the sheriff's failure to provide adequate staffing and safe housing for suicidal inmates, and in light of the sheriff's knowledge that inmate suicide was a problem, his failure to address any policies that were causing suicides constituted deliberate indifference to the constitutional rights of inmates.

## APPENDIX E: Standards

Courts define important parameters for jail operations by establishing minimum levels of service, performance objectives, prohibited practices, and specific required practices. Decisions handed down by federal courts have required jails to:

- Protect inmates from themselves, other inmates, staff and other threats
- Maintain communication with inmates and regularly visit occupied areas
- Respond to inmate calls for assistance
- Classify and separate inmates
- Ensure the safety of staff and inmates at all times
- Make special provisions for processing and supervising female inmates
- Deliver all required inmate activities, services, and programs (medical, exercise, visits, etc.)
- Provide properly trained staff

The preceding list could be attributed to the requirements of standards. But in many instances, standards go further than courts.

### Standards and Courts Are Linked

Standards and court decisions are closely linked. In many instances the courts *defer to* standards, while in other cases standards are often *based on* court decisions. Consider the following case, in which the federal appeals court referred to state and professional standards.<sup>1</sup>

Grayson v. Peed, 195 F.3d 692 (4th Cir. 1999). The administrator for the estate of a deceased detainee sued officers and county officials under § 1983, asserting constitutional violations, negligence, gross negligence, negligent training and negligent supervision. The district court granted summary judgment for the defendants on all § 1983 claims and declined to assume supplemental jurisdiction over state law claims. The appeals court affirmed. The appeals court found that there were no actionable deficiencies in the sheriff's policies, customs or training. According to the court, "...the appellant's own expert penologist conceded that [sheriff] Peed's policies met the standards of both the Virginia Board of Corrections and the American Correctional Association." The court also concluded, "...Appellant's claims that [sheriff] Peed provided inadequate training for his employees must also fail. As of the time of this incident, the ADC had been accredited for more than ten years by both the American Correctional Association and the National Commission on Correctional Health Care, two organizations whose training requirements often surpass minimal constitutional standards." (Fairfax County Adult Detention Center, Virginia)

---

<sup>1</sup> *Detention and Corrections Caselaw Catalog 20<sup>th</sup> Edition*. Rod Miller and Donald Walter. CRS Inc. Gettysburg PA. 2008. This case summary, and those that follow in this appendix are reprinted with permission.

In the preceding case, the court assigned credibility to standards that had been developed at the state level as well as professional standards developed at the national level. The appeals court also noted that professional standards, such as those promulgated by the American Correctional Association (ACA), “surpass” the constitutional minimums on which the courts must base their conclusions.

The following case is a recent example of the manner in which federal courts create new and higher requirements for jail operations. In this case, Knox County was ordered to change its strip-searching policies and practices. It was one of several jurisdictions in the United States that had been successfully sued on this issue.

*Tardiff v. Knox County*, 397 F.Supp.2d 115 (D.Me. 2005). A class action suit was brought against a county, its sheriff, and jail officers claiming that the Fourth Amendment rights of some detainees were violated when they were subjected to strip searches without reasonable suspicion that they were harboring contraband on or within their bodies. The district court held that the county violated the Fourth Amendment by adopting a policy that allowed for strip searches of all detainees alleged to have committed felony offenses...

The county eventually established a \$3 million fund to pay plaintiffs who had been strip-searched in violation of the court’s decision.

Maine, along with most other states, changed its standards regarding strip searches. ACA also changed its standard:

**4-ALDF-2C-03.**<sup>2</sup> A strip search of an arrestee at intake is only conducted when there is reasonable belief or suspicion that he/she may be in possession of an item of contraband. The least invasive form of search is conducted...

The Knox County plaintiffs brought the county to back court several months after the initial court decision, alleging that strip-searching practices had not been corrected. The court found the county at fault, noting that new state standards had been implemented after the first case had been decided.

“The court found that the county and the sheriff were liable for a policy that called for the strip searches of detainees alleged to have committed misdemeanors, without reasonable suspicion. According to the court, the sheriff was responsible, in his individual capacity, for Fourth Amendment violations arising from strip searches of all detainees alleged to have committed misdemeanors, without a showing of reasonable suspicion that they were harboring contraband on or within their bodies. The court found that the sheriff was aware of the custom of these universal strip searches and did not take effective action to halt the practice. The court noted that specific standards that

---

<sup>2</sup> *Performance-Based Standards for Adult Local Detention Facilities, 4<sup>th</sup> Edition*. American Correctional Association. Alexandria VA. Revised 2006.

described which strip searches may be undertaken in jails and prisons had been issued by the state attorney general. The state corrections department had conducted a review of the jail's policy and procedure manual and informed the sheriff that the policy pertaining to body searches needed to be revised to comply with the attorney general's rules for searches."

It is not surprising that there is some confusions about which comes first: court decisions or standards. Understanding the evolution of jail standards provides important insights into the answer.

### Where Do Standards Come From?

Most jails are, in effect, "owned" by elected county officials (usually county commissioners) who have fiscal authority. But most jails are *operated* by sheriffs, who are also elected county officials. Sheriffs share responsibility for jail operations with county commissioners. This shared responsibility often creates conflicts and challenges at the local level.

When jail conditions or operations fall below constitutional requirements, federal courts may step in and order improvements. State courts may also intervene when there are violations of state law or the state constitution. Courts set boundaries for jails in response to specific circumstances that are brought to their attention by plaintiffs. In this manner, the guidance provided by the courts is somewhat hit or miss. Courts usually provide a yes or no answer to the question "is this practice acceptable in the context of this case?" Sometimes courts will give a hint of what is acceptable in the form of remedial orders that give specific instructions, but not always.

Letting courts determine jail requirements is expensive for all parties, and does not produce comprehensive guidance for jail operations.

### Mandatory State Standards

In this context, many states found it necessary to attempt to regulate jail conditions and operations by adopting minimum jail standards. In most instances, states also had enforcement authority to compel compliance. As of 2007, 27 states had some form of state jail standards that were administered by a state agency or commission.<sup>3</sup>

State jail standards are usually described as "minimum" standards. They attempt to establish practices and conditions that the courts will find acceptable and which represent basic appropriate levels founded on prevailing professional opinion.

As states stepped up to the plate and became involved with regulating jail conditions, litigants found another party to name in suits. States became co-defendants based on the theory that the state had a duty to identify jail deficiencies, and in many states, the

---

<sup>3</sup> Jail Standards and Inspection Programs. Mark D. Martin. National Institute of Corrections, U.S. Department of Justice. Washington, D.C. April 2007

authority to compel compliance. Litigants argued, often successfully, that states were jointly liable for substandard jail conditions.

An early case in Florida sent a sobering message to all states that had jail inspection and enforcement programs. In the late 1970s, the American Civil Liberties Union (ACLU) sued the state corrections department, which had authority to establish minimum standards, inspect jails according to the standards, and enforce the standards through either closure or removal of inmates. ACLU officials believed that compelling the state to improve its inspection and enforcement activities would improve conditions throughout the state. After lengthy litigation, the state entered into a consent decree with the ACLU, agreeing to:

- Inspect each jail twice per year.
- “Vigorously, promptly, effectively, and thoroughly” enforce the jail standards by suing counties that were not in compliance.
- Upgrade and improve standards regarding space, medical screening, sick call, comprehensive medical care, compliance with fire and health codes, and inmate classification.

#### Voluntary State Standards

Five states (Florida, Idaho, Montana, Oregon, and Utah) have adopted voluntary standards and implement peer audits or reviews. The Idaho Sheriffs’ Association adopted comprehensive voluntary jail standards in 1990. Volunteer peer inspectors implement annual inspections, which are coordinated by the association.

#### Professional Standards

While many state jail standards represent minimums, national standards written by the American Correctional Association (ACA) describe a higher “professional” level of standards and practices. Compliance with ACA standards is voluntary, and although ACA offers accreditation to local jails, less than five percent of all jails are currently accredited.

Many, if not most, state jail standards are based in part on the ACA standards. Recently, county sheriffs and commissioners in Montana used the ACA Adult Local Detention Facility (ALDF) standards as the starting point for the development of their new voluntary standards.

In the past, some jail practitioners believed the ACA ALDF standards were based on prison operations rather than jails. To ensure this was not the case, ACA approached the American Jail Association (AJA) and the National Sheriffs’ Association (NSA) when it was time to develop the fourth edition of the ALDF standards. A panel of experts selected by AJA and NSA was empowered to develop the fourth edition, and to determine whether ACA’s standards for small jails should be continued.

The ALDF working group spent two years on the Fourth Edition, converting it into the new “performance-based” format and ensuring that all standards and practices applied to jail settings. The group recommended that ACA’s “Standards for Small Jails” be discontinued and that a new type of standard be developed for jails of all sizes. This was the beginning of the “core jail standards” process.

### ACA’s New “Core Jail Standards”

ACA Executive Director James Gondles, former Sheriff of Arlington County, Virginia, agreed that some form of national minimum standards were needed. With the assistance of the National Institute of Corrections, a team was brought to ACA’s headquarters for two days of meetings in April 2007 and again in March 2009. Participants were selected by NSA and AJA. Harley Lappin, Director of the Federal Bureau of Prisons, chaired the March meetings. A final draft was presented to the ACA Standards Committee in August 2009 and it was adopted.

Mark Flowers,<sup>4</sup> Director of Standards and Accreditation for ACA, described the intent and format of the new core standards in his introduction to the Field Test Draft.

The core standards are similar in scope and content to jail standards that exist in more than 30 states, and will fill a need for jails that operate without any standards along with any jails receiving compliance with national standards. The core standards attempt to describe the basic practices and conditions that all jails should maintain. We sincerely believe that any jail failing to achieve compliance with core standards is at risk for future litigation and other problems. More importantly, failure to comply with core standards may expose staff, inmates, contractors, visitors and others to risks within the work environment...

The concept of core standards was first proposed by the team that developed ACA’s 4<sup>th</sup> Edition Performance Based Standards for Adult Local Detention Facilities (ALDF) as a replacement for ACA’s Small Jail standards, and as a new tool for jails of all sizes. ACA administrative staff has long espoused a concept of core jail standards as well.

The working group extracted specific standards and practices that met the definition of core standards. The group initially edited many of the ALDF standards, extracting key elements of some of the more lengthy standards....Approximately one-third of the ALDF standards have been selected as core standards.

Flowers went on to note that the Core Jail Standards use the innovative new template that focuses on actual practices and outcomes.

---

<sup>4</sup> Contact Mark Flowers at [markf@aca.org](mailto:markf@aca.org) or 703-224-0070.

The core standards are “performance standards” that describe the conditions to be achieved, followed by a series of “expected practices” that identify activities to be implemented and conditions to be maintained. The core standards do not include several elements of the ALDF performance based template, including: comments, protocols, process indicators, and outcome measures.

### Excerpts from Core Standards for Jails

The following excerpts from the core jail standards suggest the breadth and scope of issues that affect staffing needs and practices. The right-hand column outlines staffing implications of the selected standards. At the end of each expected practice, the number from the 4<sup>th</sup> Edition ALDF is provided for reference.

**Table E-1: Excerpts from Core Jail Standards**

<b>Core Jail Standard/Expected Practice</b>	<b>Staffing implications</b>
<b>PERFORMANCE STANDARD 1A. The community, staff, contractors, volunteers, and inmates are protected from injury and illness caused by the physical environment.</b>	
The facility is clean and in good repair. 4-ALDF-1A-04	Inmate supervision must be effective enough to ensure that inmates follow rules and keep their areas clean.
<b><u>PERFORMANCE STANDARD</u></b>	
<b>1C. The number and severity of emergencies are minimized. When emergencies occur, the response minimizes the severity.</b>	
<b>Expected Practices</b>	
There is a means for the immediate release of inmates from locked areas in case of emergency and provisions for a backup system. 4-ALDF-1C-03 (MANDATORY)	Sufficient staff must be available at all times to safely evacuate inmates.
<b>2. <u>SECURITY</u></b>	
<b><i>GOAL: Protect the community, staff, contractors, volunteers, and inmates from harm.</i></b>	

(Table E-1 continued)

<b>Core Jail Standard/Expected Practice</b>	<b>Staffing implications</b>
<b>PERFORMANCE STANDARD</b>	
<b>2A. The community, staff, contractors, volunteers, and inmates are protected from harm. Events that pose risk of harm are prevented. The number and severity of events are minimized.</b>	
The facility's security, life safety, and communications systems are monitored continuously from a secure location. 4-ALDF-2A-01	One or more staff members must be provided to effectively monitor systems.
A shift commander must be physically onsite 24 hours a day.	Continuous supervisory presence is required.
When a female is housed in a facility, at least one female staff member is on duty at all times. 4-ALDF-2A-08	Staff scheduling must meet needs according to gender.
All inmate movement from one area to another is controlled by staff. 4-ALDF-2A-10	
Sufficient staff are provided at all times to perform functions relating to the security, custody, and supervision of inmates and as needed to operate the facility in conformance with the standards. 4-ALDF-2A-14	Staffing practices must combine to maintain safety and security at all times.
All special management inmates are personally observed by a correctional officer at least every 30 minutes on an irregular schedule. Inmates who are violent or mentally disordered or who demonstrate unusual or bizarre behavior must be assessed by medical personnel, who will determine the supervision that is needed. All other inmates are personally observed by a correctional officer at least every 60 minutes on an irregular schedule. 4-ALDF-2A-52	Sufficient staffing levels to provide required levels of inmate supervision at all times, for all inmates. Supervision must not be confused with observation.

(Table E-1 continued)

Core Jail Standard/Expected Practice	Staffing implications
<b>PERFORMANCE STANDARD</b>	
<b>2B. Physical force is used only in instances of self-protection, protection of the inmate or others, prevention of property damage, or prevention of escape.</b>	
<p>Four/five point restraints are used only in extreme instances and only when other types of restraints have proven ineffective. Advance approval is secured from the facility administrator/designee before an inmate is placed in a four/five point restraint..... If the inmate is not transferred to a medical/mental health unit and is restrained in a four/five point position, the following minimum procedures are followed... direct visual observation by staff is continuous prior to an assessment by the health authority or designee... subsequent visual observation is made at least every 15 minutes.... 4-ALDF-2B-03 MANDATORY)</p>	<p>Staff members must be available to provide continuous observation until assessment, and frequent observation after the assessment.</p>
<b><u>PERFORMANCE STANDARD</u></b>	
<b>2C. Contraband is minimized. It is detected when present in the facility.</b>	
<p>Procedures guide searches of facilities and inmates to control contraband and provide for its disposition. 4-ALDF-2C-01</p>	<p>Search the facility and inmates requires significant staff effort on a continuing basis.</p>
<p>A strip search of an arrestee at intake is only conducted when there is reasonable belief or suspicion that he/she may be in possession of an item of contraband. The least invasive form of search should be conducted. 4-ALDF-2C-03</p>	<p>Employees must be trained to understand the circumstances under which strip searches may be conducted, and the implementation procedures.</p>

(Table E-1 continued)

<b>Core Jail Standard/Expected Practice</b>	<b>Staffing implications</b>
A strip search of general population inmates is only conducted when there is reasonable belief that the inmate may be in possession of an item of contraband or when the inmate leaves the confines of the facility to go on an outside appointment or work detail. The least invasive form of search should be conducted. 4-ALDF-2C-04	Strip searches are staff-intensive and conducting them in an area that provides the inmate with privacy creates safety and security challenges that must be addressed with sufficient staffing levels.
Manual or instrument inspection of body cavities is conducted only when there is reasonable belief that the inmate is concealing contraband and when authorized by the facility administrator or designee. Health care personnel conduct the inspection in private. 4-ALDF-2C-05	
<b><u>PERFORMANCE STANDARD</u></b>	
<b>2D. Improper access to and use of keys, tools and utensils are minimized.</b>	
The use of keys is controlled. 4-ALDF-2D-01 (MANDATORY)  The use of tools and culinary equipment is controlled. 4-ALDF-2D-02 (MANDATORY)  Medical and dental instruments, equipment, and supplies (syringes, needles, and other sharps) are controlled and inventoried. 4-ALDF-2D-03 (MANDATORY)	Controlling access and use of keys, tools and utensils requires close staff supervision.
<b>3. <u>ORDER</u></b>	
<b><i>GOAL: Maintain an orderly environment with clear expectations of behavior and systems of accountability.</i></b>	

(Table E-1 continued)

Core Jail Standard/Expected Practice	Staffing implications
<b><u>PERFORMANCE STANDARD</u></b>	
<b>3A. Inmates comply with rules and regulations.</b>	
Policies governing supervision of female inmates by male employees and male inmates by female employees shall be based on equal employment opportunity and inmate privacy needs. Except in emergencies, facility employees shall not observe inmates of the opposite sex in toilet and shower areas. Adequate employees shall be available, as needed, to conduct or assist in the admissions process of female and male inmates, conduct searches of inmates, and perform other sensitive procedures involving inmates.	Scheduling and deployment of jail officers must consider gender. Providing inmates with privacy complicates efforts to closely supervise inmates.
<b>4. <u>CARE</u></b>	
<i>GOAL: Provide for the basic needs and personal care of inmates.</i>	
<b><u>PERFORMANCE STANDARD</u></b>	
<b>4A. Food service provides a nutritionally balanced diet. Food service operations are hygienic and sanitary.</b>	
Meals are prepared, delivered, and served under staff supervision. 4-ALDF-4A-17	Staffing practices must provide supervision of food preparation, delivery, and serving.
<b><u>PERFORMANCE STANDARD</u></b>	
<b>4D. Health services are provided in a professionally acceptable manner. Staff are qualified, adequately trained, and demonstrate competency in their assigned duties.</b>	

(Table E-3 continued)

<b>Core Jail Standard/Expected Practice</b>	<b>Staffing implications</b>
The facility has a designated health authority with responsibility for health care services pursuant to a written agreement, contract, or job description. 4-ALDF-4D-01 (MANDATORY)	
Clinical decisions are the sole province of the responsible clinician and are not countermanded by non-clinicians. 4-ALDF-4D-02 (MANDATORY)	
If the facility provides health care services, they are provided by qualified health care personnel whose duties and responsibilities are governed by job descriptions that include qualifications and specific duties and responsibilities. Job descriptions are on file in the facility and are approved by the health authority. If inmates are treated at the facility by health care personnel other than a licensed provider, the care is provided pursuant to written standing or direct orders by personnel authorized by law to give such orders. All professional staff comply with applicable state and federal licensure, certification, or registration requirements. Verification of current credentials is on file in the facility. 4-ALDF-4D-03 (MANDATORY)	
Health-trained correctional and/or health care personnel respond to life threatening health-related situations within four-minutes unless staff safety would be compromised by the response. 4-ALDF-4D-08 (MANDATORY)	Many employees will require additional training to make them “health trained” and qualified to respond. Staffing levels must be consistently high enough to ensure the four-minute response time.
First aid kits are available in designated areas of the facility as determined by the designated health authority in conjunction with the facility administrator. 4-ALDF-4D-09	

(Table E-3 continued)

<b>Core Jail Standard/Expected Practice</b>	<b>Staffing implications</b>
Individuals designated by an inmate are notified in case of serious illness, serious injury, or death, unless security reasons dictate otherwise. 4-ALDF-4D-12	The notification process, and any investigations and reports that might follow, require hours of effort from varied employees.
Information about an inmate's health status is confidential. The active health record is maintained separately from the confinement case record. Access to the health record is in accordance with state and federal law. 4-ALDF-4D-13 (MANDATORY)	
Informed consent standards of the jurisdiction are observed and documented for inmate care in a language understood by the inmate. In the case of minors, the informed consent of a parent, guardian, or a legal custodian applies when required by law. 4-ALDF-4D-15 (MANDATORY)	
Involuntary administration of psychotropic medication(s) to inmates complies with applicable laws and regulations of the jurisdiction. 4-ALDF-4D-17 (MANDATORY)	
The use of inmates for medical, pharmaceutical, or cosmetic experiments is prohibited. 4-ALDF-4D-18 (MANDATORY)	
Health care encounters, including medical and mental health interviews, examinations, and procedures are conducted in a setting that respects the inmates' privacy. 4-ALDF-4D-19	Providing inmates with privacy while ensuring the safety of employees and inmates is a staff-intensive activity.
Only a medical or mental health professional may authorize the use of restraints for medical or psychiatric purposes. 4-ALDF-4D-21 (MANDATORY)	

(Table E-3 continued)

<b>Core Jail Standard/Expected Practice</b>	<b>Staffing implications</b>
An investigation is conducted and documented whenever a sexual assault or threat is reported. 4-ALDF-4D-22-2	Investigations require participation from various jail employees, often taking them from their posts.
Sexual conduct between staff and detainees, volunteers or contract personnel and detainees, regardless of consensual status, is prohibited and subject to administrative and disciplinary sanctions. 4-ALDF-4D-22-5	Prevent sexual conduct requires a high level of supervision.
Victims of sexual assault are referred under appropriate security provisions to a community facility for treatment and gathering of evidence. 4-ALDF-4D-22-6 (Mandatory)	Movement outside the facility often requires a great deal of staff effort.
Authorities having jurisdiction are immediately notified of an inmate's death. There is a protocol that describes actions to be taken in the event of the death of an inmate. 4-ALDF-4D-23	Most jurisdictions expend a great deal of staff effort investigating an inmate death and preparing reports.
A health record file is maintained for all inmates containing information specified by the health authority. 4-ALDF-4D-26	Expanded record-keeping requirements require significant employee effort.
<b>4. <u>PROGRAM AND ACTIVITY</u></b>	
<i><b>GOAL: Help inmates to successfully return to the community and reduce the negative effects of confinement.</b></i>	
<b><u>PERFORMANCE STANDARD</u></b>	
<b>5A. Inmates have opportunities to improve themselves while confined.</b>	
Inmate programs, services and counseling are available, consistent with community standards and resources. 4-ALDF-5A-01	Providing programs often requires outside service providers and volunteers to move through the jail.

(Table E-3 continued)

<b>Core Jail Standard/Expected Practice</b>	<b>Staffing implications</b>
<b><u>PERFORMANCE STANDARD</u></b>	
<b>5C. The negative impact of confinement is reduced.</b>	
Inmates have access to exercise and recreation opportunities. When available, at least one hour daily is outside the cell or outdoors. 4-ALDF-5C-01	Staffing practices must provide for secure movement of inmates to and from exercise, and supervision of exercise activities.
Inmates have the opportunity to participate in practices of their religious faith consistent with existing state and federal statutes. 4-ALDF-5C-17	Inmates are supervised when moving to and from religious meetings, while in meetings, and while meeting with religious volunteers and employees.
<b>6. <u>JUSTICE</u></b>	
<b><i>GOAL: Treat inmates fairly and respect their legal rights. Provide services that hold inmates accountable for their actions, and encourage them to make restitution to their victims and the community.</i></b>	
<b><u>PERFORMANCE STANDARD</u></b>	
<b>6B. Inmates are treated fairly.</b>	
When both males and females are housed in the same facility, available services and programs are comparable. 4-ALDF-6B-03	Lack of staff will not excuse failure to provide comparable programs and services for males and females.

(Table E-3 continued)

<b>Core Jail Standard/Expected Practice</b>	<b>Staffing implications</b>
<p>Inmates with disabilities, including temporary disabilities, are housed and managed in a manner that provides for their safety and security. Housing used by inmates with disabilities, including temporary disabilities, is designed for their use and provides for integration with other inmates. Program and service areas are accessible to inmates with disabilities who reside in the facility. 4-ALDF-6B-04</p>	<p>Some inmates who have disabilities may require assistance with daily activities such as bathing. They may also require assistance to move from the housing unit to other areas in the jail.</p>
<p><b><u>PERFORMANCE STANDARD</u></b></p>	
<p><b>7B. Staff, contractors, and volunteers demonstrate competency in their assigned duties.</b></p>	
<p>Prior to assuming duties, all correctional officers receive training in the facility under the supervision of a qualified officer. At a minimum, this training covers the following areas..... In each subsequent year of employment correctional officers receive documented in-service training in critical areas of the operation. 4-ALDF-7B-10 All personnel authorized to use firearms and less lethal weapons must demonstrate competency in their use at least annually. 4-ALDF-7B-15 (MANDATORY)</p>	<p>Net annual work hour calculations must accurately predict staff time required to accomplish training at the beginning of each budget cycle.</p>



## **APPENDIX F: Using Staffing Analysis Tools to Analyze Overtime—A Case Study**

### **Diagnosing Overtime Using the NIC Staffing Analysis Methodology and Tools**

*This appendix presents a memo prepared by John E. Wetzel, Warden, Franklin County Jail, Chambersburg, PA. The memo was submitted to county officials in an effort to address overtime problems.*

When I was appointed Warden of the Franklin County Jail in January of 2002, we faced serious physical plant and operational challenges, including severe crowding. This year we moved into a new state-of-the-art jail. NIC proved invaluable to our efforts in many ways. NIC's staffing analysis resources were used to:

- Improve safety and security in the old jail
- Evaluate plans for the new jail at several stages of design to improve staffing efficiency
- Guide transition efforts as we prepared to move into the new jail
- Refine staffing practices after we opened the jail
- Troubleshoot problems encountered with overtime

In addition to staffing analysis, NIC, the National Institute of Justice, and the Bureau of Justice Assistance assisted Franklin County in many other ways, including:

- Bringing community and criminal justice stakeholders together to examine jail crowding issues in a "local systems assessment"
- Exploring alternatives to incarceration in other jurisdictions
- Developing a strong foundation for our inmate work and industry programs
- Acquiring new vulnerability assessment skills and tools
- Training our staff in the Direct Supervision management style

This appendix examines the use of the staffing analysis methodology in October 2007 when we faced serious overtime and related challenges. I employed several elements of the staffing analysis process in an effort to diagnose the causes of our overtime problems, and to forge effective solutions.

In June of 2007, we began to experience an increase in overtime. As overtime often increases over the summer due to a rise in vacations, coupled with some staff shortages, we chose to monitor the situation. We began to compile new data and compared our current situation with previous years.

Specifically, we looked at overtime patterns historically, as well as leave time used by officers from 2003 until present. We also had discussions with employees who resigned in an effort to understand the reasons for their resignation.

We have always done an annual staffing analysis and this data was also used to assess the situation. We began to identify possible solutions to consider if overtime did not decline in September.

Our assumption was that if we continued to hire staff up to our maximum authorized level and move them through the hiring and training process, in September our overtime numbers would be reduced. If not, we would select a fiscally responsible, yet workable solution to address this prior to the end of 2007.

Unfortunately, overtime did not decline in September. We identified the causes of excess overtime and evaluated potential solutions in an effort to find the best fit. This process included meeting with the union to secure their input regarding the causes of the problem and potential solutions.

We developed a workable solution that would establish temporary positions that would be filled in anticipation of vacancies. Some agencies call this practice “overhiring”. This will reduce the time that positions are vacant after a resignation, easing overtime demands. As overtime is reduced, the amount of overhiring would also decline. We also asked our correctional officer union to select a group of staff members to explore alternative schedules that might ease the frustration of newer officers who do not have weekend days off. The current union contract requires a 5 - 2 schedule that favors employees with the most tenure.

The staffing analysis process, which has been central to our operations for five years, provided a solid foundation upon which to find solutions to our current problem.

The memorandum that I prepared for our county commissioners follows. After careful deliberation, the commissioners approved the steps that were described in the memo.

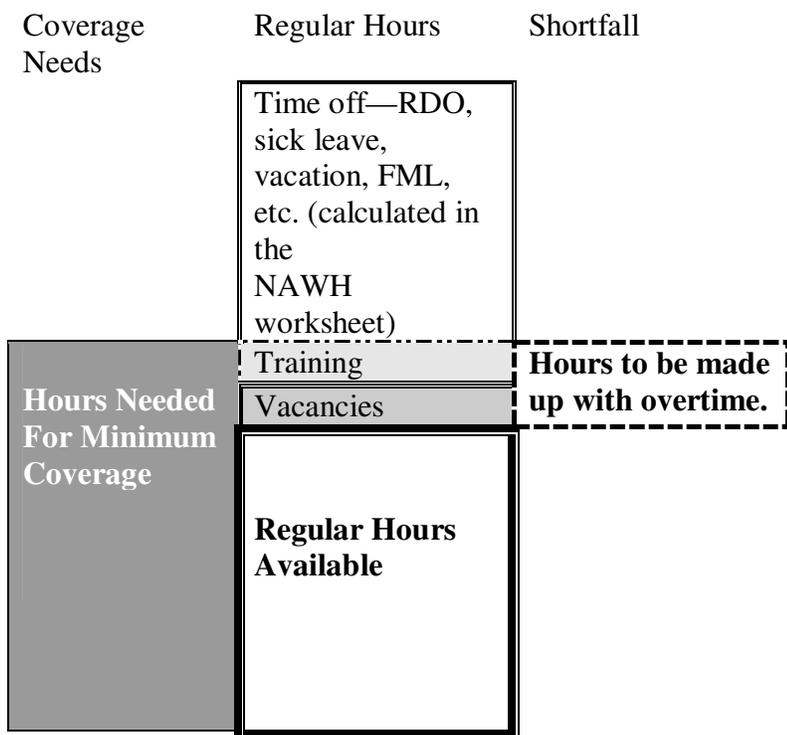
=====

**Framing the problem**

Over the past several months, we have experienced a significant correctional officer shortage. The number of regular hours available from our employees has consistently been lower than what we need to maintain minimum staffing levels in the facility. The shortfall forces us to use overtime and to draft employees for overtime when we are unable to get enough volunteers. This is a relatively new problem, but we have encountered it in the past, most recently in January, 2007 and before that July, 2005. It is important to analyze the causes of this problem and to find effective solutions before morale is eroded and employee performance drops.

As with many staffing problems, this one is caused by a combination of several factors. Our minimum coverage needs are relatively constant during the year; although we do experience periodic fluctuates due to temporary “details” such as hospital security. To date, our coverage needs are consistent with what we had expected for the year. Therefore, we are having a problem with the amount of regular hours available to fill shifts. There are three primary deductions from employee regular hours that are important to our current analysis. These are illustrated in Figure F-1.

**Figure F-1: Primary Deductions from Employee Regular Hours**



**Hours needed**

Our minimum staffing level, that deploys 17 people on 1<sup>st</sup> and 2<sup>nd</sup> shift and 13 on 3<sup>rd</sup> shift, yields 45 officers per day or 371.25 correctional officer staff hours per day. Multiplying that sum by 366 days (next year is a leap year) results in 135,877.5 hours. Another factor that we are required to calculate is holidays. All employees who work on a holiday are paid at 2.5 times their normal rate for all hours worked on a holiday. So the number of hours required for those who are working on a holiday is 6,125. Beyond that, officers who aren't working receive 8 hours of holiday pay, or 3,256 hours, so holidays alone require an additional 9,356 hours. Additionally, we can anticipate an additional 2,000 hours for special duties such as hospital trips (emergency) and shakedowns, etc. An additional 4,100 hours of training results in the anticipated need of 151,300.5 hours for 2008.

## **Analysis of Current Causes**

Each of the three primary deductions from employee hours are at higher levels than projected, creating a “perfect storm” with elevated levels of overtime.

*Time Off.* The first category of concern is the various types of “time off” that employees are allowed—regular days off, sick days, vacation, and such. While our projections for this year did anticipate an increase of scheduled leave time during the summer months, and hunting season, we did not anticipate the higher level of unscheduled leave (sick leave and long-term sick leave (FMLA) that is being experienced. This means that employees are reporting for fewer shifts than were expected, reducing the number of “net” regular hours we have to work with.

*Vacancies.* The second category involves the number and duration of vacancies. Because of the low unemployment rate in the region, we have struggled to find qualified employees to work at the jail. Several factors have been identified:

- A recent phenomenon is one in which people accept the job, begin the training process, and then leave when another job comes available that either pays more, or has a more favorable schedule. We have also lost 10% of new hires during their training period (which is consistent with other jails).
- Employee pay scales are scheduled to increase once the negotiated contract is finalized, which should help somewhat. But in this employment environment, even jails that pay significantly more than we do are experiencing the same challenges.
- Employee schedules (times of work, days off) are not as attractive as other jobs available in the region. Few of our employees have a full weekend off and it takes years of seniority to earn that schedule. This is a challenge that is difficult to overcome. As part of this plan, we are sending a proposal to the union to explore other schedules that would equally distribute favorable days off (primarily weekends) to less senior staff.
- Looking only at the vacancy rate, and taking into account the 8-10 weeks it takes to fill a position and train the staff properly prior to deployment, we need to find a long-term solution for this issue.

*Training.* Finally, we are experiencing more “lost” hours to training than were anticipated. This is due to:

- A higher rate of turnover which means that more new employees are paid for basic training before they are able to be deployed.
- New employees leaving before finishing their basic training

We are experiencing an average vacancy rate of 5% (a little more than 4 officers on an average day). On a typical day, another 5% of the employees are out on long term medical leave. Most

surprising are the additional 10% of our employees who are out on intermittent FMLA. The sum of these issues has resulted in an increase in overtime, as the diagram on page one suggests.

### **Budget impact**

On the plus side of the ledger, the vacancies, coupled with the fact that many of those on FMLA have no leave time accrued and are therefore not being paid while they are absent, have produced an overall decrease in the correctional officer line-item of the budget (3.92% or \$113,532.69).

The funds allocated for correctional officer wages are not expended when there is a vacancy. These unexpended funds are sufficient to offset the costs of overtime.

Because sick leave and FMLA levels are so high, many employees have exhausted their accrued sick time and are away from work without pay, reducing the drain on the budget. Again, this is a phenomenon that is not unique to Franklin County; many of my colleagues are attempting to find solutions to this also.

Although the net impact on the annual budget will be negligible at the end of the year, this problem must be addressed or employee morale will continue to fall, turnover will continue to increase, and operations will be adversely impacted.

### **Proposed solution**

The immediate answer to this problem is found in a new approach to managing vacancies. It is the one element of the formula that is within our control.

Our proposed solution to this shortage is to establish eight temporary positions on a short-term basis, in order to get "ahead of the curve". By doing this for a finite period of time (until overtime has once again balanced out), coupled with quarterly hiring next year (only if we are below the number of budgeted positions), I believe we may overcome our current dilemma.

In other words, on January 1, 2008, we will look at the number of officers we have and identify any anticipated vacancies (probationary employees not receiving favorable recommendations, promotions, resignations, retirement, etc.). If the anticipated vacancies will take us below our budgeted cadre (82), we will hire additional officers and start a training academy. If we are at or above our target number we will wait until April 1, and once again evaluate the situation.

This approach will help to keep us more fully staffed and will move new employees into full time positions in a more responsive manner.

After a careful review of costs, I believe that this approach will not increase our total staffing costs next year. We should be able to reduce vacancies, and therefore overtime, offsetting additional costs for the over-hires. Also, the amount of sick leave and FMLA without pay should serve to offset any potential increase.

### **A different approach that should prove cost-neutral**

Historically, we have looked at staffing at the jail on a position-by-position basis. We wait for a position to be vacant before we start the hiring process. We have further delays because we need to have enough new employees to justify implementing a basic training academy. As a result of this approach, the impact of vacancies (the number of days a position is vacant) is amplified.

The current approach is inefficient given the amount of time that it takes to fill vacant positions, and the approach of training staff prior to deploying them (which is essential to ensure the safe and secure operation of the facility). The recommended changes consider the overall hours needed to operate the jail on a yearly basis. Remember that we have budgeted the jail's staffing using this approach since my appointment. This approach has brought us within 3% of budget each year, but the current situation demands a change in our administrative policies.

Adding these temporary positions will not result in an increase in the total needed hours, and therefore, will not increase the amount of money budgeted for staffing. Rather, it will ensure that more of those needed hours are paid for at straight time, as opposed to overtime. It will, in effect, substantially reduce the total number of vacancy days next year and produce a corresponding reduction on overtime.

### **Summary**

I believe that this proposal is sound and offers a long-term solution for a problem that has emerged for the first time this year, but which may be anticipated to continue. While at first glance it may seem that eight temporary positions is a lot, remember that they are already budgeted because our staffing analysis methodology helps us to budget for annual hours, not positions.

Time is of the essence. We anticipate running an academy before the end of October, 2007, and wish to make these hires in the next 10 days. (We constantly interview applicants and place them on waiting lists.)

I would be very glad to sit down and discuss this with you.

Respectfully submitted,

John E. Wetzel, Warden

*Note: The proposals outlined in this memo were implemented and proved effective.*

## **APPENDIX G: Increasing Staff Efficiency by Managing Inmate Behavior**

Daily operations are tougher when inmates don't follow the rules, cooperate, and engage in activities, programs and work. Dealing with inmate misbehavior and boredom takes valuable time away from the many other tasks that already burden our jail employees. During a recent staffing analysis, the Hennepin County Sheriff's Office calculated the time jail officers spend handling a range of inmate behavior problems. They were surprised at the number of employee hours consumed by handling misbehavior and following up with documentation and, at times, discipline.

Many jails have found that innovative, aggressive and coordinated management of inmates' conditions of confinements creates an environment in which inmates behave appropriately and get involved with activities and programs. The Washtenaw County Sheriff's Office in Ann Arbor, Michigan, implements an innovative "Earned Release Time" program that motivates pretrial detainees and sentenced offenders to work and participate in programs. The National Institute of Corrections (NIC) has developed a new initiative—*Inmate Behavior Management*—to help jails motivate inmates.<sup>1</sup>

This appendix draws on the experiences of Montgomery County, Maryland, during transition planning for their new correctional facility.

### Managing Conditions of Confinement to Improve Inmate Behavior

It's a simple concept and it's not new. Correctional managers set policies about all aspects of inmates' lives-- their physical setting, opportunities, programs, and privileges. We control just about *everything* for inmates in our custody and care. This can be a burden, or an opportunity. Taking an aggressive, coordinated and proactive approach to the management of conditions of confinement establishes a setting in which inmates have constant and consistent encouragement to demonstrate appropriate behavior and become involved with productive activities.

This appendix focuses on innovative ways to manage inmates' conditions of confinement to promote desired behavior and to engage inmates with activities and programs. "Conditions" include the physical setting and the operational environment.

Carefully determining conditions of confinement for the entire inmate population will ensure that:

- Inmates are rewarded with better conditions of confinement as they improve their behavior
- Employees promote consistent and fair inmate behavior management practices

### Coordinating Conditions of Confinement

Every jail already has some sort of "conditions of confinement" system in place. Many are inadequate because:

- \* Conditions are inconsistently allocated to different types of inmates
- \* Few elements are actually used as incentives
- \* Elements are not used to their full potential

---

<sup>1</sup> Contact NIC at [www.correction.org](http://www.correction.org) to learn more about Inmate Behavior Management and other programs and resources.

A quick three-step process can identify inconsistencies and opportunities:

1. Classify various types of inmates and housing units into distinct categories that should have similar conditions of confinement.
2. Select the specific conditions of confinement elements that you want to use to promote improved inmate behavior.
3. Assign variations of each selected element to each grouping of inmates.

### **STEP 1: Classify Inmates Into Groupings**

Take a hard look at your inmate population and your facility. Identify inmates who should have the "worst" conditions of confinement (such as disciplinary segregation) and those that should have the "best" conditions (such as trusties).

Start to group various classifications of inmates together according to the level of conditions of confinement that they should receive. The number of groupings will depend on your facility mission, your classification system, and to some extent the opportunities your facility offers to distinguish the treatment of different types of inmates.

To help frame your thinking, consider the diagram in Table G-1 (at the end of this appendix). This may help to identify some of the key attributes that will distinguish one group of inmates from another. Add additional considerations to those identified in Table 1 based on your own policies and practices.

Table G-2 offers an example a jail that identified six distinct groupings of inmates. Some jails might have fewer groupings (possible, but not likely) and some might be able to accommodate even more groupings.

Make a chart like the one in Table G-2 for your own facility. After you have completed it, take a hard look at it to be sure that it is realistic and fair. Make adjustments as needed to correct any problems that you identify.

### **Step 2: Select the Conditions Elements That You Want to Manage**

Your policies and practices already describe ways that conditions of confinement vary for different types of inmates in your facility. These are a starting point for this step, but should not limit your thinking. Be creative and consider expanding the ways that you manage conditions of confinement in your jail.

Use Table G-3 (end of appendix) as a "shopping list" to identify each condition of confinement element that you want to manage. This list is a *starting* point-- there are many additional ways that creative managers use conditions of confinement to improve inmate behavior.

Complete Table G-3 and step back and consider your work.:

- \* Have you identified all of the *existing* elements that you manage?
- \* Have you identified some *new* elements that can be managed?
- \* Is it realistic to think that you can manage each element that is checked?

Consider passing the completed chart around to employees to secure their ideas and to identify their concerns.

### **Step 3: Assign Specific Levels to Each of the Groupings**

For many managers, this step is the fun part: creating a comprehensive and proactive setting in which every inmate is given constant and consistent incentive to improve his/her behavior.

Create a chart that is organized like the one in Table G-4 with a column for each of the "groupings" that you identified in Step 1. Enter a conditions element from Step 2 on each row of the chart and then work your way across the groupings, making distinctions.

Fill in the chart as a draft and then step back and take a close look at it, asking the following questions:

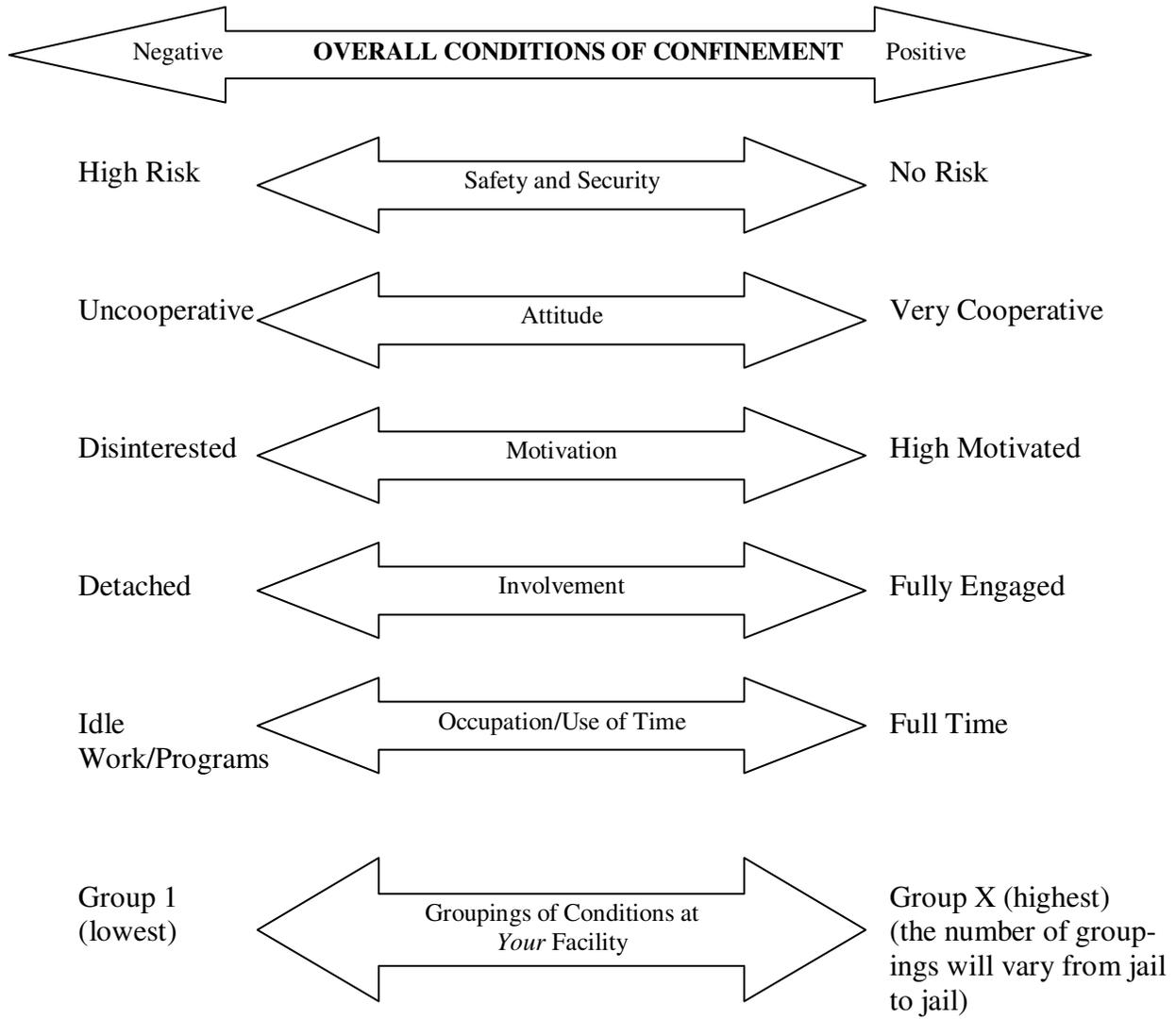
- Are there *consistent* improvements in conditions as an inmate moves from left to right on the chart? (look at each row from left to right)
- Are the *cumulative* conditions of confinement (the horizontal columns) appropriate for each group of inmates?
- Is it realistic to think that you can make all of the distinctions that are described in the chart?

After you have made initial revisions, pass the chart around to employees, contractors, and volunteers and ask for their ideas. You may even want to sit down with some inmates to secure their reaction. After all, they can tell you what is most important to them. Don't forget to ask reviewers to offer their comments about the groupings and possible additional elements to consider.

After you have secured a thorough review of the draft, make revisions and start the implementation process. Make periodic reviews and revisions. Consider this to be a work in progress that should be improved with experience.

The results—inmates who behave the way you want them to behave-- will be realized soon.

**Table G-1: Conditions of Confinement Continuum**



**Table G-2: Sample of Groupings**

Level	Housing Units/Classifications of Inmates	Comments
1 "worst"	* Disciplinary Segregation (Male and Female)	Highest level of security Lowest level of privileges
2	* Pre-Classification	Inmates who have not yet been classified
3	* Maximum security inmates * Inmates in administrative segregation	
4 "average"	* Medium security inmates (male and female) * Protective Custody (male and female)	
5	* Minimum security inmates * Inmates in programs part-time * Inmates who work part-time	Inmates who are engaged in programs or work part-time
6 "best"	* Full-Time Workers (male and female) * Inmates in full-time programs (or in a combination of work and programs) * Inmates in release programs (work- or education release)	Inmates who are engaged in work and/or programs full time and who have earned the lowest security rating

**Table G-3: Shopping List of *Potential* Tools to Motivate Inmates**

(identify those that you want to manage with an "X")

<b>Physical Conditions</b>	Cell occupancy (single, double, or dorm)
	Unit Size, Density (crowding)
	Fixtures (plumbing, doors) Finishes (carpet, etc.)
	Furnishings (fixed/moveable, institutional/residential)
	Inmate Control of lights
	Inmate control of cell access during day
<b>Daily Schedule/Security</b>	Lights Out
	Lock-Ins (times locked into cell for counts, etc.)
	Out-of-Cell Time
<b>Visiting</b>	Frequency of visits
	Length of Visits
	Type of Visiting (e.g. non-contact, contact)
<b>Exercise</b>	Frequency (of access)
	Length (of access)
	Activities Available
	Equipment Available
<b>Recreation</b>	Access to recreational materials
	Frequency of access
<b>Telephone</b>	Access (hours, length of calls, number of phones)
	Type of Calls Permitted
<b>Food</b>	Quality/Selection (e.g. Nutra-Loaf)
	Snacks/Juice Bar
	Dining conditions (cell/dayroom/dining room)
<b>Activity</b>	Work options and desirability of jobs
	Library access
	Computer access (in housing units)
	Location of activities (hsg unit, pod, central)
	Opportunities for co-ed activities
<b>Entertainment Television</b>	Hours TV is Available
	TV Content Allowed (e.g. educational, broadcast, cable)
	Equipment (number of sets, type of sets)
<b>Movies</b>	Availability of Movies/Videos
	Content Allowed (e.g. PG, PG-13, R)
<b>Special Events</b>	Access to Concerts/Performances/Special Events
<b>Commissary</b>	Frequency of Access to Commissary
	Selection Available
<b>Other Privileges</b>	Personal Property (more allowed, different types)
	Personalize Cell (able to hang pictures, etc.)
	Clothing (better clothing, option to use own clothes)
	Movement/Mobility within Facility (escort/unescorted)
	Extra Time Off of Sentence
	Furloughs/Temporary Release
<b>Other Incentives/Rewards (use your imagination...)</b>	

**Table G-4: Sample of Assignment of Specific Levels to Each Group**

Element to be Managed		Description of Specific Conditions/Privileges for Each Grouping of Inmates					
		Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
Physical Conditions	Cell Occupancy	Single	Double	Dorm	Double	Double	Single
	Furnishings	Steel./fixed	Steel/fixed	Steel	Not steel Not fixed	Not steel Not fixed	Residential
	Inmate Allowed to Control Access to Cell- Daytime	No	No	No	No	Yes	Yes
Sched./ Secure	Lights Out	9:00	9:30	10:00	10:30	11:00	11:30
	Out-of-Cell Time	1 hr/day	4 hrs/day	6 hrs/day	10 hrs/day	12 hrs/day	16 hrs/day
Exercise	Number of times per day allowed	1	1	2	3	Exer.area open all day	Exer. area open all day
	Exercise equip. available	None	Basketball	Basketball	Basketball and Some Exer. equip.	Basketball and More Exer. equip.	Basketball and Most Exer. equip.
Tel- phone	Hours telephone available daily	None	1 hour	2 hours	4 hours	12 hours (dayroom)	16 hours (dayroom)
	Length of calls allowed	None	10 minutes	15 minutes	No limit	No limit	No limit
Food	Type of Food Available	Discipl. Menu	Basic Menu	Basic Menu	Enhanced Menu	Enhanced Menu	Enhanced Menu
	"Extra" Food	None	None	None	Evening Snack	Two Snacks/day	Three Snacks/day
	Dining Conditions	In Cell	In Cell	Dayroom	Dayroom	Dayroom	Separate Dining Area
Activity	Type of job available	None	None	House-keeping	Part-time Job only	Full-time Job	Full-time "preferred"
	Location of activities	None allowed	Cell Area	Housing Unit	Housing Unit	Centralized (group)	Centralized (group)
	Computer access (dayroom)	No	No	No	Yes-limited	Yes-more hours	Yes-most hours
Entertain- ment	Hours TV Available	None	Orientation Tapes only	Evenings 2 hours	Evenings 3 hours	Evenings 6 hours	Days and Evenings
	TV Content Allowed	None	Orientation Only	News and Education	Broadcast Only	Broadcast Some Cable	Broadcast Cable
	Movies/Videos Allowed?	No	No	No	1/week	2/week	3/week
Comm- issary	# Commissary Orders/Week	None	None	1	1	2	3
	Commissary Selection	None	None	Limited	Limited	Expanded	Expanded
Other Privileges	Personal Property Allowed	None	None	Limited (Basic)	Less Limited	More Allowed	Most Allowed
	Clothing	Uniform	Uniform	Uniform	Uniform	May wear personal	May wear personal
	Personalize Cell?	No	No	No	Two pictures	Pictures Posters	Pictures Posters
	Movement in Facility	Escorted	Escorted	Escorted	Some Unescorted	More Unescorted	All Unescorted
	Days off sentence per month	None	None	None	5 days/ month	10 days/ month	15 days/ month



## APPENDIX H: Evaluation Checklist

### Evaluation Checklist

This form allows you to evaluate your coverage plan from a variety of perspectives. Instructions are integrated into each part of the form.

#### Part 1: Consistency and Efficiency of Plan

The analysis described in Step 6 requires comparing the graphs generated for activities (Step 2) and the draft coverage plan (Step 5), looking for a correlation between the peaks and valleys. Record the results of this analysis on Part 7 of this form.

#### Part 2: Key Questions Concerning the Plan and Scheduling

Ask these questions about your plan. If any problems are identified, record them on Part 7 of this form.

1. Does the plan present any conflicts with existing employee contracts or agreements? If yes, identify them, and discuss them with appropriate officials.

Conflicts need not be avoided, but should be put on the table and evaluated early in the process. A good staffing plan will benefit management and labor and should be attractive to all parties.

2. Does the plan pose any problems in terms of shift changes during key periods of the day?

In general, major staff changes should not occur during peak levels of facility operation.

3. Is supervision provided for all staff at all times?

4. Are shift definitions reasonable? (If 10- or 12- hour shifts are called for, can staff function effectively in their assigned roles for that length of time?) If staff are asked to work a “split-shift,” will they be willing to do so?

### Part 3: Considering Key “Scenarios” to Determine Adequacy

This part of the evaluative effort asks you to “walk through” several operational procedures using the staffing plan. For each of the issues shown below, consider the steps involved with implementing the practice, with an emphasis on:

- Who is involved or responds?
- How long does the function take?
- What areas or functions are left uncovered?
- Are all involved staff qualified?

As you conduct this analysis, record any problems or deficiencies that you identify in Part 7 of this form.

#### SCENARIO CHECKLIST

DIRECTIONS. Check the appropriate response and record comments in the right column (specify deficiencies, etc.). Record problems in Part 7.

Function/Activity		Coverage Adequate?		Comments
		Yes	No	
1	Serving meals to all prisoners			
2	Processing new arrivals			
3	Prisoner visiting			
4	Prisoner exercise/recreation			
5	Prisoner telephone access			
6	Sick call / medication			
7	Library access and services			
8	Conducting formal counts			
9	Conducting prisoner programs			
10	Moving prisoners to court appearances			
11	Staff meetings			
12	Clothing and linen exchange			
13	Distributing/collecting mail			
14	Conducting evacuation drill			

## Part 4: Standards Compliance Issues

State standards provide one critical source of evaluation for staffing plans. Check to see if your state inspector has developed a staffing checklist based on the standards. If not, review your standards carefully and develop a list of specific standards that pertain to staffing. Determine if your plan meets each of these standards; record compliance problems on Part 7.

Professional standards have been promulgated by several organizations, including the American Correctional Association (ACA). A 10-page checklist derived from these standards is offered in Form 5B; the checklist below summarizes some issues identified in standards. For each issue, determine if your staffing plan allows you to comply with standards:

- At all times?
- For every type of prisoner?
- In all areas of the facility?

If it does, then check the blank in front of the question. If it does not, record deficiencies identified here on Part 7 of this form.

- Provide staff training, development, and qualification.
- Maintain records and management information systems.
- Provide continuing observation and around the clock supervision of prisoner housing areas.
- Provide enough staff to ensure prompt release from locked areas in the event of an emergency.
- Maintain a control center.
- Provide assistance from another staff member whenever an officer enters a high security housing area.
- Serve meals under supervision of staff.
- Provide medical care and medication.
- Protect prisoners (from abuse, corporal punishment, personal injury, harassment).
- Implement disciplinary procedures, reports, and hearings.
- Provide mail service.
- Implement prisoner admission, orientation, and release procedures.
- Conduct prisoner classification.
- Provide prisoner programs and services (counseling, education, religious).
- Provide prisoners with at least one hour of physical exercise outside their cells daily (outdoors when possible).

## **Part 5: Assessing Adequacy of Plan in Terms of “Backup”**

To assess backup needs, consider a series of contingencies in various locations in the facility.

Some initial contingencies to consider include:

- A disturbance in a cell area
- A combative prisoner in the booking area
- A fire requiring evacuation of the facility

For each of the contingencies, pick a location, a day and a time. Consider how staff will react to the problem: which staff will move to an area to provide backup, and what areas are left uncovered as a result?

Record deficiencies and problems on Part 7.

## **Part 6: Circulate for Review and Comments**

This part of the evaluative process may involve more time than the others. If it does in your facility, consider implementing this concurrently with Part 7.

One of the best evaluative methods at this point in the process is to share a draft staffing plan with staff and officials. Solicit initial comments and concerns, and, if necessary, meet with them to resolve potential conflicts. Be sure the plan is scrutinized from several perspectives.

Consider seeking comments from

- Line staff (including a sampling of those assigned to different posts)
- First line supervisors
- Mid-management staff
- Contract service providers (medical, education, counseling, etc.)
- Program and activity staff
- Support staff (maintenance, food service, etc.)
- Jail inspector

Collect written comments from each reviewer whenever possible, and discuss comments that need clarification.

Record problems on Part 7 of this form.













**Form E: Scheduling Efficiency**

<b>Employee Name</b>	<b>Sun</b>	<b>Mon</b>	<b>Tues</b>	<b>Wed</b>	<b>Thur</b>	<b>Fri</b>	<b>Sat</b>	<b>Total Days Scheduled</b>
<b>A</b>								<b>0</b>
<b>B</b>								<b>0</b>
<b>C</b>								<b>0</b>
<b>D</b>								<b>0</b>
<b>E</b>								<b>0</b>
<b>F</b>								<b>0</b>
<b>G</b>								<b>0</b>
<b>H</b>								<b>0</b>
<b>I</b>								<b>0</b>
<b>J</b>								<b>0</b>
<b>K</b>								<b>0</b>
<b>L</b>								<b>0</b>
<b>M</b>								<b>0</b>
<b>N</b>								<b>0</b>
<b>O</b>								<b>0</b>
<b>P</b>								<b>0</b>
<b>Q</b>								<b>0</b>
<b>R</b>								<b>0</b>
<b>S</b>								<b>0</b>
<b>A. Total Scheduled</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>B. Total Coverage Needed</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>C. Coverage minus Scheduled (B minus A)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

**Form F: Net Annual Work Hours (NAWH)**

	Job Classifications				
	Classif-ication 1	Classif-ication 2	Classif-ication 3	Classif-ication 4	Classif-ication 5
To ensure that your calculations are correct, please press the Tab key or click on an empty cell after entering your data.					
<b>Steps</b>					
1. Total hours contracted per employee per year (if a regular workweek is 40 hours, then 40 x 52.14 weeks = 2,086)					
2. Average number of vacation hours per employee per year					
3. Average number of compensatory hours off per employee per year					
4. Average number of sick leave hours off per employee per year					
5. Average number of training hours off per employee per year					
6. Average number of personal hours off per employee per year					
7. Average number of military hours off per employee per year					
8. Other (Specify)					
9. Other (Specify)					
10. Other					
11. Other					
12. Other					
13. Other					
14. Other					
15. Other					
16. Other					
17. Other					
<b>19. Total hours off per employee per year</b>					
(total lines 2 through 19)	0	0	0	0	0
<b>20. Net annual work hours</b>					
(subtract line 19 from line 1)	0	0	0	0	0

## **APPENDIX J: More on Scheduling and Scheduling Tools**

As we examine the math and mechanics associated with schedules, we will start with the big picture--shift configuration.

### Shift Configurations

From a distance, scheduling often looks pretty simple-- pick your basic “shift configuration” which consists of:

- Number of hours that comprise a shift.
- Start and end times for each shift.
- Employee Regular Days Off (RDO).

A growing number of jails use more than one shift configuration as a creative solution to meet staffing needs. For example, the 4/10 (4, 10-hour days) pattern may work for an officer assigned to supervise an 8-hour inmate work crew because a 10-hour shift allows time to set up and wrap up each day. Similarly, a 9- or 10-hour shift might fit better into the hours of coverage needed for court movement, transport, or other functions that span more than 8 hours.

The NAWH process completed in Step 6 makes it much easier to use more than one shift configuration.

Many jurisdictions have adopted two 12 hour shifts with varying degrees of success and satisfaction. Some facilities have tried 12 hour shifts and decided to return to 8-hour configurations, while others are very pleased with 12 hour shifts. We have encountered several jurisdictions that moved to 12 hour shifts in response to chronic problems with scheduling staff for 8-hour shifts. Shortages prompted mandatory assignment of staff to extra shifts, often resulting in a 16-hour work-day when a staff member was required to work two consecutive shifts.

Employees often support 12 hour shifts because they eliminate the possibility of working two consecutive shifts. Many agencies have found that demand for overtime is not significantly reduced through 12 hour shifts. But filling empty shifts is more challenging when an agency uses 12 hour shifts. Typically, one officer is asked to stay for another four hours after finishing a 12 hour shift (a total of 16 hours) and the incoming officer is asked to report four hours early (also a total of 16 hours). Some agencies allow employees to work six hours after completing a 12 hour shift, creating a 18 hour period of work.

## The Math of Shift Configurations

Shift pattern variations are virtually limitless. One source of many examples is *The Manager's Guide to Alternative Work Schedules—Second Edition*, by W.L. Booth. This book is available on loan from the NIC Information Center<sup>1</sup>, or a copy may be purchased from the publisher, the Institute of Police Technology and Management.<sup>2</sup>

Because a jail is such a complex organization and staffing needs are often unique, adopting *varied* work schedules may be effective. Changing your shift configuration, or even adding another type of configuration for some of your coverage needs, can be emotional and initially difficult, but it may result in certain benefits, such as:

- Improved staff morale as job satisfaction increases.
- Less turnover, less sick time, and improved quality and quantity of work.
- Financial savings due to more efficient use of staff.
- Improved success recruiting new employees.

Table J-1 is drawn from *The Manager's Guide to Alternative Work Schedules*. It summarizes the descriptive statistics for 21 different alternative schedules and allows comparison of the features of each schedule. The chart depicts work schedules that range from 8- to 12 hour days. Such scheduling approaches as split shifts and flextime are not included on the chart, as they do not lend themselves to this type of analysis.

## Evaluating alternative work schedules

When considering alternative work schedules, several factors should be weighed. Benefits and costs are often traded off as decisions are made.

- Hours of operation and timeframes. While many jail activities operate 24 hours per day, others may have substantially shorter hours (visiting areas, public reception, etc.). Examine each function of the jail to find out if different work schedules would be effective.
- Days operated each week. Many jail operations continue 7 days per week, but others may vary. For instance, a jail may operate an industry or work program that closes on weekends. Scheduling staff for these functions might require alternative approaches.
- Objectives of the organization. The goals and objectives of the jail may suggest appropriate scheduling. If the jail places a high priority on inmate visiting, visiting hours might be scheduled at the convenience of visitors, rather than staff. As a result, work schedules might change.

---

<sup>1</sup> National Institute of Corrections Information Center, [www.nicic.org](http://www.nicic.org), (800) 877-1461, (303) 682-0213

<sup>2</sup> University of North Florida, 12000 Alumni Drive, Jacksonville, FL 32224-2678; <http://iptm.org>.

- Levels of activity. Different components of the jail might require more intense staffing. For example, maximum-security inmates are more difficult to supervise during outdoor recreation, suggesting the need for additional staff. A creative staffing plan might provide more staff for that function through overlapping shifts.
- Employee contracts and labor laws. Any potential change in work schedules must be evaluated in light of existing contracts and laws. Involving labor representatives and legal counsel early in the process is advisable.
- Staff training. If it is difficult to provide in-service training for staff, alternative schedules (such as over-lapping shifts) may create new opportunities for this key activity.
- Fatigue and productivity. Research indicates that longer work days decrease productivity, but that corresponding shorter workweeks may offset fatigue. Alternative work schedules must be carefully weighed to ensure that staff are not overtired and less able to perform critical duties. Fatigue is compounded when employees are not provided with needed breaks during their shift.
- Scheduling for different positions. Some new jobs created in the jail may be amenable to, or even require, alternative scheduling.

The decision to change your shift configuration will ultimately hinge on the assessment of their feasibility and on whether the changes can be implemented without too much disruption or negative reaction. The rewards for creative use of alternative work schedules are often great enough to overcome most potential logistical problems.

Changing shift configurations often *requires* negotiation with employees' bargaining units. But even if you are not required to negotiate changes in shift configurations, in our opinion, you should consult with employees and their representatives when you are considering changes. Solicit their suggestions and work with them to craft changes that work for them, as well as the facility.

The NIC staffing analysis process strongly suggests that you have union members or other employee representatives "around the table" throughout the process. Giving employees meaningful opportunities to shape changes in jail operations and scheduling not only brings important insights and ideas to the process, but also increases the likelihood that employees will accept the changes that result.

### **Measuring the Efficiency of Schedules**

After schedules are determined to be *sufficient*-- meeting coverage needs at all times--it is appropriate to determine scheduling efficiency. Staffing costs represent more than half of jail operating costs, often more than 70% of the annual costs. Most jails cannot afford to

waste any of their staffing resources, and a review of scheduling efficiency measures the extent to which hours are scheduled when they are not needed.

Really. It happens. There are times when more employees report for duty than are needed to meet coverage needs. Of course supervisors rarely complain about this windfall, and often find creative ways to use the extra hours. But when employees work their regular hours when they are not addressing coverage needs, it usually creates a shortfall later in the fiscal year.

Before we describe efficiency methods, let's put the budgeting process in the context of the overall staffing analysis process.

The road to providing sufficient staffing is fraught with error. At every turn, there are many ways to fail and make mistakes. The following list describes *some* of the difficulties encountered in this process, using the letters on each arrow of the flowchart to indicate the point at which the difficulties are encountered:

- A. Incomplete or inaccurate characterization of the context. Not using data fully, not identifying changes and trends.
- B. Underestimating coverage needs by not evaluating sufficiency. Failing to find ways to “work smarter” with what we have. Not using data to refine coverage needs.
- C. Inaccurate calculation of Net Annual Work Hours (NAWH).
- D. Inefficient schedule(s) and/or failure to account for the inefficiency of schedules.
- E. Unable to fill authorized positions, or to keep them filled.
- F. Employees who are actually deployed are not fully effective due to fatigue, lack of training, lack of experience, and other factors.

Difficulties and deficiencies at *any* of these stages reduce the adequacy of the staffing practices that are finally employed. Many jails wrestle with *most* of these issues.

**Table J-1: Descriptive Statistics for Alternative Work Schedules**

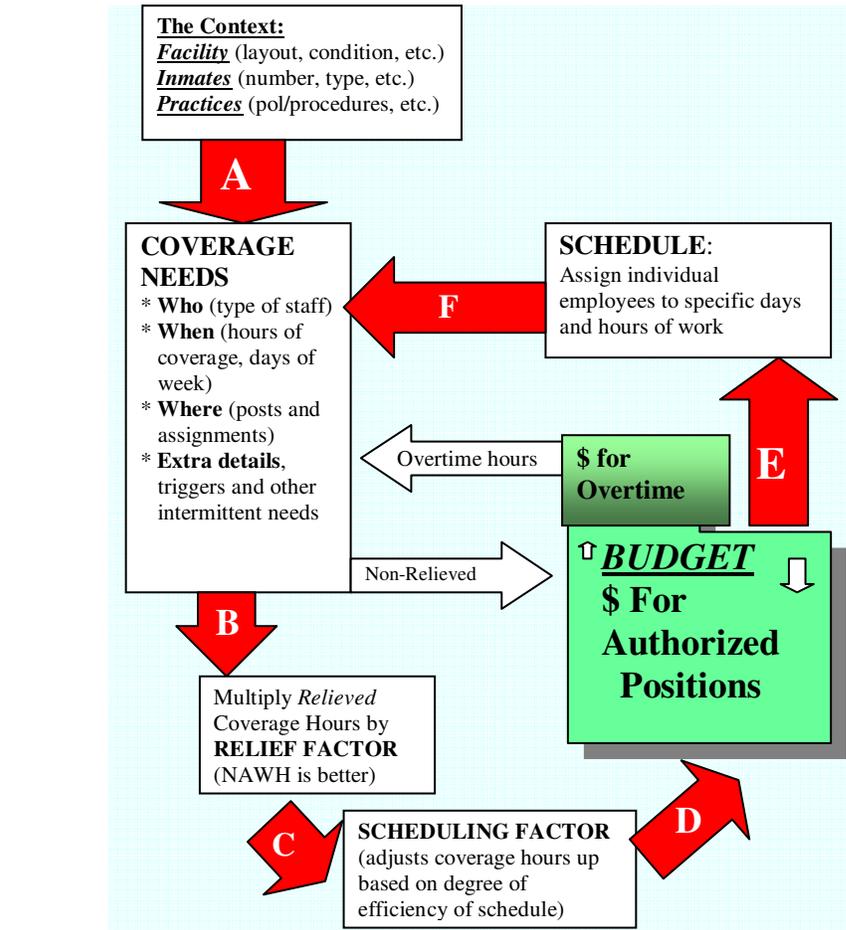
		8-Hour Workday			9-Hour Workday	10-Hour Workday			12 hour Workday	
Shift Schedule		5-2	5-2 Variable	3-2 7-2 5-2	5-2 5-3	4-3	4-3 3-4	4-2 4-3	3-3	4-4
<b>Consecutive Time Required</b>	-Hours per Day	8	8	8	9	10	10	10	12	12
	-Days Per Week	5	5	3, 5, 7	5	4	4	4	3	4
<b>Workdays and Offdays in Cycle</b>	-1st Shift	5-2	5-2	3-2	5-2	4-3	4-3	4-2	3-3	4-4
	-2nd Shift	5-2	5-2	7-2	5-3	4-3	4-3	4-3	3-3	4-4
	-3rd Shift	5-2	5-2	5-2	5-3	4-3	4-3	4-3	None	None
<b>Schedule Work Cycle-</b>	-Days Per Cycle	21	21	21	23	21	21	20	12	16
	-Cycles Per Year	17.33	17.33	17.33	15.83	17.33	17.33	18.2	30.33	22.75
<b>Number of Workdays</b>	-Per Shift	5	5	3,5,7	5	4	4	4	3	4
	-Per Cycle	15	15	15	15	12	12	12	6	8
	-Annually	260	260	260	237	208	208	218	182	182
<b>Number of Offdays</b>	-Per Shift	2	2	2	2 or 3	3	3	2 or 3	3	4
	-Per Cycle	6	6	6	8	9	9	8	6	8
	-Annually	104	104	104	127	156	156	146	182	182
<b>Weekends Off Annually</b>	-Full	52	0 to 26	34	14	52	52	10	16	18
	-Partial	0	0 to 26	0	14	0	0	18	18	12
<b>Number of Other Offdays</b>	-Holidays	9	9	9	8, 9-hour	7.2	7.2	7.2	6	6
	-Vacation	12	12	12	11, 9-hour	9.6	9.6	9.6	8	8
	-Compensatory	0	0	0	6	0	0	10	9	9
<b>Total Scheduled Hours Annually</b>	Workdays <i>times</i>	260	260	260	237	208	208	218	182	182
	Hours =	8	8	8	9	10	10	10	12	12
	TOTAL	2,080	2,080	2,080	2,133	2,080	2,080	2,180	2,184	2,184

Adapted from *The Manager's Guide to Alternative Work Schedules—Second Edition*, by W. L. Booth. Institute of Police Technology and Management. University of North Florida, 12000 Alumni Drive, Jacksonville, FL 32224-2678; <http://iptm.org>.

## Staffing Analysis and the Budgeting Process

Figure J-1 describes the process through which needs are identified, coverage is determined, and the “math” of calculating relief factors and determining budget needs.

**Figure J-1: Staffing Analysis Flowchart**



### Why Measure Scheduling Efficiency?

The focus of this section is to demonstrate how schedules vary in their efficiency and to provide a new tool to calculate the efficiency of schedules as a new component in the budget-setting process. If your schedules are not 100% efficient, you must determine the extent to which employees' regular work hours are lost, and ask for sufficient budget resources to compensate.

Just as we calculate Net Annual Work Hours (NAWH) to identify the hours that employees are away from their posts with pay, measuring scheduling efficiency identifies the hours that employees' efforts are misplaced.

## Back to Coverage as the Benchmark

Previous efforts to identify actual staff coverage needs once again provide a starting point. You should revisit your coverage needs to determine if they represent the “minimums” that are acceptable, or if they sometimes describe optimal staffing levels. Ask whether any lower level of staffing would result in unsafe or insecure operations. If the answer is yes, then your coverage levels are minimums.

## Identify Minimum Staffing Levels

If your coverage needs do not represent minimums, you will need to establish minimum levels of staffing for each shift and each day of the week. These minimums provide the bottom line below which staffing levels must not drop. Minimum staffing levels will vary from shift to shift, and sometimes from day to day.

## Describe Staffing Levels and Contingencies

Written policies and procedures should guide all facets of jail operations. Employees must be directed and supervisors must be provided with guidance. Policies and procedures must anticipate various contingencies that will be encountered, providing clear instructions for each situation. These contingencies will include times when:

- Staffing levels are temporarily below minimums
- Staffing levels are temporarily higher than coverage needs prescribe

When staffing levels fall short of minimums, supervisors must know what steps are to be taken, such as:

- Instituting mandatory overtime to fill vacancies
- Operating below minimum levels and altering operations to compensate for staffing shortfalls (which post[s] may be unfilled, what services or activities are to be suspended)

Some jails encounter chronic problems filling their shifts. Although budgets authorize sufficient positions, they are not able to hire and retain enough employees to fill the roster. Overtime is used to fill shift vacancies, but employees have limits to the number of hours and days they may safely work. These jails often set up a hierarchy of operational decisions that respond to the actual level of staffing that occurs on each shift, such as:

1. One employee short on Shift A, Tuesdays: Suspend inmate outdoor recreation.
2. Two employees short on Shift A, Tuesdays: Suspend inmate programs.
3. Three employees short on Shift A, Tuesdays: Suspend inmate visitation.
4. Four employees short on Shift A, Tuesdays: Close program center.

This approach reduces the levels of activities, and even closes certain areas of the facilities, in response to staff shortages.

### Practices Must be Consistent

Policies, procedures, and post orders provide the foundation for jail operations. Failing to consistently comply with these directives erodes the safety and security of the jail, and exposes all parties to liability. Daily practices must comply at all times and under all circumstances.

### Two Approaches to Scheduling Staff

Scheduling is the process of assigning individual employees to specific hours and days of work:

1. Assigning the exact number of employees to match the minimum staffing levels for each shift.
2. Assigning extra employees in anticipation of absences (in effect “overbooking” a shift anticipating that some employees will not appear for work every time they are scheduled).

The first approach relies on employees who are working overtime, or part-time employees, to fill intermittent vacancies on shifts.<sup>3</sup> This approach rarely results in scheduling inefficiencies because the number of employees who report for duty does not exceed the minimum levels.

The second approach acknowledges that employees have many reasons for failing to report for a given shift. As a rule of thumb, an employee will not be available for 15 to 20 percent of the days for which he/she is scheduled. The Net Annual Work Hours (NAWH) calculations reflect this phenomenon.

In practice, the second approach will produce more unwanted levels of staffing, but *either* approach may result in inefficiencies depending on the shift configuration that is used.

### Shift Configurations

Earlier in this appendix explored the “shift configuration” which consists of:

- Number of hours that comprise a shift.
- Start and end times for each shift.
- Employee Regular Days Off (RDO).

We noted that many jails use more than one shift configuration as a creative solution to meet staffing needs. Now we provide a tool to evaluate the efficiency of various shift

---

<sup>3</sup> In some larger facilities, some employees are scheduled to be part of a “pool” that is available to backfill vacancies as needed, using regular hours instead of overtime or part-time employees.

configurations. Each shift configuration will bring its own challenges in terms of efficiencies. Also, the number of employees who are to be scheduled often creates inefficiencies when combined with the shift configuration. Consider Table J-2, which schedules 9 employees for 8-hour shifts. The total number of employees who appear each day varies from 5 to 7.

**Table J-2: Illustration of 8-Hour Shift Schedule with 9 Employees**

Employee Name	Mon	Tues	Wed	Thur	Fri	Sat	Sun	Weekend Days Off
1. Carole	X	X	X	X	X	O	O	2
2. Larry	X	X	X	X	O	O	X	1
3. Jean	X	X	X	O	O	X	X	0
4. Moe	X	X	O	O	X	X	X	0
5. Rudolph	X	O	O	X	X	X	X	0
6. Susan	O	O	X	X	X	X	X	0
7. James	O	X	X	X	X	X	O	1
8. Barbara	X	X	X	X	X	O	O	2
9. Nancy	X	X	X	X	O	O	X	1
<b>TOTAL On Schedule by Day</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>6</b>	<b>5</b>	<b>6</b>	<b>(7)</b>

But if only 7 employees were being scheduled (Table J-3), the number who appear each day would be the same (5). This demonstrates the impact that the number of employees may have on the consistency of a schedule, and ultimately on the efficiency of a schedule. When using a 5 on- 2 off shift configuration, multiples of 7 employees will produce level results.

**Table J-3: Illustration of 8-Hour Shift Schedule with 7 Employees**

Staff Name	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Weekend Days Off
1. Carole	X	X	X	X	X	O	O	2
2. Larry	X	X	X	X	O	O	X	1
3. Jean	X	X	X	O	O	X	X	0
4. Moe	X	X	O	O	X	X	X	0
5. Rudolph	X	O	O	X	X	X	X	0
6. Susan	O	O	X	X	X	X	X	0
7. James	O	X	X	X	X	X	O	1
<b>TOTAL On Schedule by Day</b>	<b>5</b>	<b>(4)</b>						

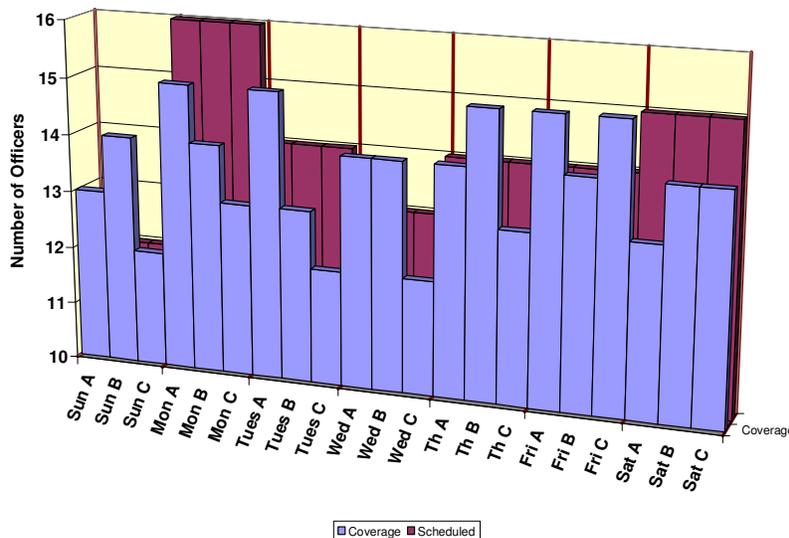
Similarly, many 12 hour shift configurations operate with teams that work opposite schedules.<sup>4</sup> When the total number of employees on the two teams is an even number, the resulting schedule will provide level staffing levels, while an odd number of staff assigned to the two teams will produce different levels of staffing half of the time.

Using the coverage plan to determine schedule efficiency

As with measuring sufficiency, the coverage plan is the foundation for measuring efficiency. When you developed your coverage plan (Step 3) you identified the number and types of staff needed using a spreadsheet. This provided the basis for the mathematical calculations that are needed to determine the number of full-time-equivalent (FTE) staff needed in the budget (Form C).

To evaluate the sufficiency of a schedule according to shift assignment levels, use Form C to identify the work days and off days for each staff member assigned to a shift. Fortunately, the same techniques used to determine sufficiency also indicate efficiency. A negative number in our previous calculations told us that the schedule was insufficient. A positive number (see Table J-2) suggests that the schedule is *inefficient*. The positive figures and totals in Table J-2 numerically suggest the efficiency-- or lack of efficiency. Figure J-2 graphically identifies the times that the schedule *exceeds* coverage needs by showing where columns in the back of the chart (scheduled hours) are higher than the coverage needs in the front.

**Figure J-2: Coverage Needs Compared to Scheduled Hours**



When the number of employees who actually present themselves for a shift is below the level needed to ensure safety and security, various responses address the shortfall

<sup>4</sup> An example is the 4/3, 3/4 schedule that repeats every two weeks. Team 1 would have the first four days off, while Team 2 would be working those four days. Team 1 would work the next three days while Team 2 is off.

(bringing in employees on overtime, using part-time employees, holding employees over for another shift, reducing operations to adjust to the shortfall). But when *more* employees report, it is possible to waste costly staff hours.

Some jail managers assert that it is rarely possible to have too many employees on a shift because there are always extra duties that may be performed. In many instances, this may be true. But when an employee's regular hours are expended for activities that are not funded in the budget (e.g. not identified in the coverage needs, or not anticipated in Net Annual Work Hours calculations), at the very least a budget problem is created.

Because the excess hours are not free, they are essentially wasted. These come out of your budget, but do not reduce the hours you need to operate your jail. At worst, funds will run out before the end of the budget year and staffing levels may be forced to drop below safe levels in order to reduce overtime.

How often do more employees report for duty than are needed in your jail? Probably more often than you think. More important, if you are not able to provide a quick and accurate answer, you are not measuring your losses.

Most jails are not armed with the tools to identify and analyze this situation. Rarely does a jail collect needed detailed information about actual deployment that allows for thorough analysis. Intermittent (and sometimes periodic) staff overages are common, but are rarely recognized. In some instances, we have found over 20% of employees hours are worked at times, and for activities, that were not included in the coverage plan or NAWH.

The most common symptom of this ailment is a shortfall of funds at the end of the budget year—employee regular hours do not go as far as they were expected to go. This provokes three types of responses:

1. Unexpected use and levels of overtime.
2. Temporary curtailment of jail activities in order to stay within the budget (such as canceling visitation, canceling inmate dayroom time).
3. Failure to staff key posts.

When these unwelcome budget surprises are identified, any of these responses produces serious management and operational problems.

If overtime is used to respond to shortfalls, employees will be working more hours and days, resulting in fatigue, diminished performance, and a disruption of their personal lives. This degrades employee performance and often erodes employee morale.

When the second response—curtailment—is used, the routine operation of the jail is interrupted. In many instances, this diminishes the extent to which the jail's mission is achieved during the curtailment. Sometimes the effects of curtailment are cumulative and impact operations in later days and weeks.

But when key posts are vacant, there may be immediate threats to the safety and security of the jail. Most jails use a combination of these three responses. The proactive manager also learns from these unpleasant experiences and improves future management and budgeting practices.

It is common for a jail manager to simply add the amount of the current year's shortfall to the request for next year—easy but clearly imprecise. We suggest a more calculated approach that accurately identifies the hours that were not accounted for, and then explores whether there is another way to address the ebb and flow of the schedule without throwing more money at the problem.

Earlier in this narrative we demonstrated how often a simple schedule produces varied levels of employees on the daily roster, sometimes exceeding the level of coverage that was determined to be necessary. We identified various responses that respond to the *insufficient* level of staffing, including:

- Asking employees to volunteer to work overtime, or instituting mandatory overtime to fill vacancies.
- Calling on part-time personnel to fill vacancies.
- Operating below minimum levels and altering operations to compensate for staffing shortfalls (e.g. which post[s] may be unfilled, what services or activities are to be suspended).

Employee *shortfalls* on a shift present operational problems which, if not addressed effectively may pose safety and security risks, and heighten agency liability exposure.

Employee *excesses* rarely pose such operational problems—after all, more hands and heads to implement the many jail tasks are always welcome. Rather, these excesses create budget and management problems.

There are many ways to respond to intermittent employee excesses. These include:

1. Sharing employee(s) with another team that has a shortfall
2. Assigning employee(s) to special details and activities that were anticipated in the budget, such as shakedowns or security inspections
3. Assigning employee(s) to activities that were anticipated in the Net Annual Work Hours (NAWH) calculations, such as training
4. Allowing employee(s) to leave early, using some of their earned time off

The first two responses apply the extra employee to activities that were part of the coverage plan. The latter two use employee hours that were budgeted as part of the NAWH calculations (see Step 6). In both situations, the activity was anticipated and funded in the budget. When employees work “outside the budget,” managers often find themselves in trouble at the end of the year.

## **APPENDIX K: How “Shift Work”<sup>1</sup> Affects Health and Performance**

### **Shift Work, Sleep Deprivation and Jail Schedules**

The use and management of shift work is worthy of close attention, for the benefit of the efficiency and productivity of the workplace and for the health and well-being of workers. Sleep related problems are common in American workers, and even more so among men 30-60 (Young, et al., 1993, Millman et al. 1991, National Commission on Sleep Disorders Research, 1992, Webb, 1995). Shift work adds significantly to these problems. There is ample evidence from many kinds of shift work settings (such as factory workers, firefighters, medical residents and nurses, as well as correctional officers) that shift work is often connected to sleep difficulties and disorders and that, in turn, sleep problems lead to short term and chronic health issues as well as difficulties on the job – 60% to 80% of shift workers show sleep disorders (Leger, 1994; Rosch, 1996). It also seems clear that the way shift work is managed can limit or mitigate some of these problems.

Shift work leads to difficulties in both the quantity and quality of sleep. Shift workers are likely to sleep for fewer hours during periods when they are on work shifts for times other than their biological daytime, and also have poorer, less restful sleep. Sleep hours can be reduced or become fragmented. Recovery from lost sleep is not quick and can take more than one night of longer sleep (Gordon et al., 1986; Van Dongen et al., 2003). These sleep difficulties have a number of serious consequences:

#### Physical health effects

Knutsson (2003) suggests that the shift work leads to disease through multiple pathways. Disruption of normal daily rhythms (circadian rhythms - defined below) increases susceptibility to diseases directly and by disrupting normal sleep. It also leads to changes in behavioral patterns, such as increased smoking, poorer diet and reduced exercise, in part because of increased stress and social disruptions. Shift workers are more likely to suffer from marital and family problems. All of these patterns (smoking, diet, reduced exercise) have been related to increased likelihood of illness.

Because of these changes in healthful patterns of living, and other problems related to lack of sleep (hypertension, diabetes, increased cholesterol levels) sleep problems have been shown to lead to increased incidence of cardiovascular disease, and shift workers may have as much as 40% increase in risk of CVD (Bøggild, H. Knutsson, A., 1999).

In addition, shift work and sleep disorders have been related to increases in gastrointestinal and metabolic disorders, at least in part because of digestive responses to eating meals at biologically odd hours (Costa, 1996). Shift work has also been associated with cluster headaches (Beck et al., 2005).

---

<sup>1</sup> Shift work is generally defined as work scheduled work that is outside of the traditional work day (8 a.m. to 5 p.m.) or work week (Monday through Friday). It is often used to describe operations that are continuous for 24 hours.

The fatigue and reduced level of alertness that comes along with sleep problems and working during biological night has other mental and behavioral effects. Mental alertness and cognitive process are made less effective, leading to reduced productivity and, in the case of correctional institutions, increased chances of missing critical events or behaviors. Shift work is associated with an increased rate of accidents on the job, and, even more common, accidents driving home from work at the end of a long late shift. In addition, irritability is increased and inhibitions can be reduced during sleep deprivation (Folkard et al, 2005). People working during sleep deprivation are likely to have incidents of “micro-sleep” – unnoticed (even by themselves) periods of very brief sleep or nodding off (Swenson et al., 2008).

Reduced mental alertness, lower levels of working memory capacity and lessened cognitive abilities are reflected in poorer performance with respect to self regulation, self control and risk assessment; poorer judgment, increased impulsiveness, poorer reasoning skills and more “sloppy” behavior on the job (Alhola, & Polo-Kantola, 2007, Kimberg, et al., 1998).

These problems also have additional implications for organizations. Sleep problems from shift work have been related to increased absenteeism and rates of staff turnover and greater use of sick time (Caruso, et al., 2004). Because of these absences, it also often results in increased use of overtime, often resulting also greater use of less experience staff to cover for absences.

### Mechanisms – how shift work leads to problems

Shift work (like jetlag) affects circadian rhythms. “Circadian,” in Latin, literally means “about one day” and refers to the various cycles of a living organism that function on or are somehow related to the 24 hour cycle of a day ([http://en.wikipedia.org/wiki/Circadian\\_rhythm](http://en.wikipedia.org/wiki/Circadian_rhythm)). These rhythms are sensitive to patterns of light and dark and can be adjusted or reset to some degree by exposure to lighting – especially high intensity daylight. High intensity lights are used clinically in this manner to reduce jet lag or as therapy for seasonal affective disorders – a form of depression that is increased during winter months when we experience reduced levels of light.

Human performance is most seriously affected when people are awake and working during hours of their biological night, and the impact is most detrimental in the hours before normal waking (Barger et al., 2009).

### Managing shift work

All 24 hour institutions must address shift work. The question is not whether to have shifts, but how best to manage them and in what ways can one ameliorate the negative effects – both for the workers and for the organizations. One approach is to address the nature of the shifts themselves – length, time on shift, timing, time between, rotation schedule. Others include providing training in ways to manage time and recognize symptoms of sleep disorders, and provide professional support to deal with problems as they arise.

Length of shifts. Extended shifts for medical interns have long been seen as hazardous to work performance. Workers on shifts of 12 hours or longer, when combined with schedules that have more than 40 hours of total work per week, show increased fatigue reduction in alertness, cognitive functioning, performance on vigilance tasks, and increases in level of injuries and health complaints (Caruso, e al., 2004). One study of nurses found no differences in performance

between 12 and 18 hour shifts with respect to cognitive ability provided the subjects were able to get adequate (7 hours) sleep (Thomas et al., 2006).

The US Navy has traditionally used 6 hour shifts for seamen (6 hours on duty, 6 hours on other assignment, 6 hours sleep), creating effectively an 18 hour work day. Recent research has indicated, however, that these 18 hour days lead to more problems in fatigue and performance than schedules that synchronize with the biological 24 hour day. Because of this research, the navy is considering abandoned their traditional schedule for one based on 8 hour shifts (Crepeau et al 2006).

In industrial settings, longer shifts, whether from regular schedules or overtime, have led to much higher accident and injury rates. Working at least 12 hours per day was associated with a 37% increased risk of injury. Working 60 hours/week or more led to a 23% increase. There appears to be a linear relationship – as hours per day worked increases in regular schedules the rate of injuries rises. There is also a higher risk of accidents during night shifts, and one study found 10 hour shifts had 13% increased injury risk than 8 hour shifts, with 12 hour shifts having a 27% greater risk of injury. (Folkhard et al., 2005). Even though many workers claim that their social and domestic life is better with 12 hour shifts but performance declines compared to 8 hour shifts (Mitchell & Williamson 2000).

Time between shifts. Recent research suggests that the time available to workers between shifts may be important in order for to get necessary amounts of sleep. Nurses working with less than 16 hours between shifts got less than their required amount of sleep. The authors recommend 16 hours as a minimal time between shifts. (Kurumatani et al., 1994)

Direction of shift rotation. Workers adjust more easily to shift changes when their schedule allows them to shift in a forward clockwise direction, (day than evening, then night) than when changing shifts counterclockwise (Knauth, 1995).

Speed of rotation. Very brief periods on shifts (several days at a time) result in no break in circadian rhythms but are very difficult for workers to endure. During moderate times on a shift periods on a shift (several weeks) there is little ability to adjust circadian rhythms to time changes, causing continual disruptions in sleep patterns. Slow changes in shifts (several months or more) allow for circadian patterns to adjust and change, although some argue that for many total adjustment is never made, leading long term negative effects (Knauth, 1995).

Breaks during shifts. Studies suggest that frequent short breaks during overnight shifts are more effective than one long break in increasing levels of alertness. “The severity of the effects from shift work stress is directly related to the recovery time necessary to offset those effects (Van der Hulst & Guerts, 2001 cited in Swenson et al., 2008, p. 305).

Training. Several researchers have suggested that one can reduce negative effects of shift work by providing training for staff members in a number of areas such as ways to enhance sleep, safety procedures, family issues and when and how to recognize sleep disorders and seek professional help. One study suggested that staff turnover rates can be substantially reduced by implementation of such programs. (Delprino, n.d. in cited in Swenson et al., 2008). Medical

professionals suggest that institutions that depend on shift work set up programs for identifying and seeking treatment for sleep problems. This can include treatment of accompanying problems, including marital and family issues.

People can also learn better ways to make use of caffeine, such as in coffee, to reduce sleepiness and increase alertness (Muelenback & Walsh 85). In particular, recent research has found that, rather than drinking large amounts of coffee at one time “high-frequency low-dose caffeine administration is effective in countering the detrimental performance effects of extended wakefulness” (Wyatt et al., 2004).

Regulation of overtime. Accidents, especially while driving home from a shift, is a serious concern when staff members are drowsy from overnight shifts or significant overtime. Managers need to take care of amount of overtime and condition of staff leaving the institution. “A key issue with 12-h shift systems and the potential for increased fatigue and reduced alertness is the regulation of overtime (Gould, 1989 cited in Baulk et al, 2009, p. 697). This should be systematically regulated and tracked in order to avoid further extension of wakefulness wherever possible (or so that additional safeguards can be used if wakefulness is extended beyond acceptable limits). Most regulated systems specify that no longer than 4 hours of additional work be added to any 12-hour shift, and also that a minimum period of 8–10 hours of rest break be taken following any period of extended work.” (Baulk et al., 2008, p. 697)

Others suggest that, where possible, staff should avoid especially risky duties in the hours before normal biological waking (3-5 am) and do things to increase alertness “such as conversations, walking about or exercising, having healthy snacks, or going into brightly lit areas.” (Swenson et al., 2008, p. 305)

Physical conditions. Circadian rhythms respond to levels of light and dark. Providing high intensity lighting (1000 lux or greater) in the workplace can help reduce sleepiness. It may be just as important to assure darkness at home for sleeping with drapes, eye masks, etc. (Burgess et al., 2002).

## References

- Alhola, P. & Polo-Kantola, P. (2007). Sleep deprivation: impact on cognitive performance. *Neuropsychiatric Disease and Treatment*, 3(5), 553-567
- Barger, L. K., Lockley, S. W., Rajaratnam, S. M. W., & Landrigan, C. P. (2009). Neurobehavioral, health, and safety consequences associated with shift work in safety-sensitive professions. *Current Neurology and Neuroscience Reports*, 9(2), 155-164.
- Baulk, S. D., Fletcher, A., Kandelaars, K. J., Dawson, D., & Roach, G. D. (2008). A field study of sleep and fatigue in a regular rotating 12-h shift system. *Applied Ergonomics*.
- Beck, E., Sieber, W. J., & Trejo, R. (2005). Management of Cluster Headache. *American Family Physician*, 71(4), 717-724.
- Bøggild, H., & Knutsson, A. (1999). Shift work, risk factors and cardiovascular disease. *Scandinavian Journal of Work Environment and Health*, 25, 85-99.
- Burgess, H. J., Sharkey, K. M., & Eastman, C. I. (2002). Bright light, dark and melatonin can promote circadian adaptation in night shift workers. *Sleep Medicine Reviews*, 6(5), 407-420.
- Caruso, C. C., Hitchcock, E. M., Dick., R. B., Russo, J. M., & Schmit, J. M. (2004). *Overtime and extended work shifts: recent findings on illnesses, injuries, and health behaviors*: US Dept. of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.
- Costa, G. (1996). The impact of shift and night work on health. *Applied Ergonomics*, 27(1), 9-16.
- Crepeau, L. J., Steele, C. T., & Duplessis, C. A. (2006). At-Sea Evaluation Of An Alternative Submarine Watchstanding Schedule.
- Dembe, A. E., Erickson, J. B., Delbos, R. G., & Banks, S. M. (2005). The impact of overtime and long work hours on occupational injuries and illnesses: new evidence from the United States. *British Medical Journal*, 62(9), 588-597.
- Folkard, S., Lombardi, D. A., & Tucker, P. T. (2005). Shiftwork: safety, sleepiness and sleep. *Industrial Health*, 43(1), 20-23.
- Gordon, N. P., Cleary, P. D., Parker, C. E., & Czeisler, C. A. (1986). The prevalence and health impact of shiftwork. *American journal of public health*, 76(10), 1225-1228.
- Kimberg, D.Y., D' Esposito, M. & Farah, M.J. (1998). Cognitive functions in the prefrontal cortex - working memory and executive control. *Current Directions in Psychological Science*, 6(6), 185-194
- Knauth, P. (1995). Speed and direction of shift rotation. *Journal of Sleep Research*, 4(s2), 41-46.
- Knutsson, A. (2003). Health disorders of shift workers. *Occupational Medicine*, 53(2), 103-108.
- Kurumatani, N., Koda, S., Nakagiri, S., Hisashige, A., Sakai, K., Saito, Y., et al. (1994). The effects of frequently rotating shiftwork on sleep and the family life of hospital nurses. *Ergonomics*, 37(6), 995-1007.
- Leger D. The cost of sleep-related accidents: A report for the national commission on sleep disorders research. *Sleep* 1994;17(1):84-93
- Millman, R. P., Redline, S., Carlisle, C. C., Assaf, A. R., & Levinson, P. D. (1991). Daytime hypertension in obstructive sleep apnea. Prevalence and contributing risk factors. *Chest*, 99(4), 861-866.

- Muehlbach, M. J., & Walsh, J. K. (1995). The effects of caffeine on simulated night-shift work and subsequent daytime sleep. *Sleep(New York, NY)*, 18(1), 22-29.
- National Commission on Sleep Disorders Research. Wake up america: A national sleep alert. 1-18. 1992. Palo Alto, CA, Stanford University Sleep Disorders Clinic and Research Center. Ref Type: Report
- Rosch, P. J. (1996). EDITORIAL. STRESS AND SLEEP: SOME STARTLING AND SOBERING STATISTICS. *Stress Medicine*, 12(4).
- Swenson, D. X., Waseleski, D., & Hartl, R. (2008). Shift Work and Correctional Officers: Effects and Strategies for Adjustment. *Journal of Correctional Health Care*, 14(4), 299.
- Thomas, F., Hopkins, R. O., Handrahan, D. L., Walker, J., & Carpenter, J. (2006). Sleep and cognitive performance of flight nurses after 12-hour evening versus 18-hour shifts. *Air Medical Journal*, 25(5), 216-225.
- Van Dongen, H.P.A., Maislin, G., Mullington, J.M. & Dinges, D.F. (2003). The cumulative cost of additional wakefulness: dose response effects on neurobehavioral functions and sleep physiology from chronic sleep restriction and total sleep deprivation. *Sleep*, 26(2), 117-126.
- Webb WB. The cost of sleep-related accidents: A reanalysis. *Sleep* 1995;18:276-280.
- Wyatt, J. K., Cajochen, C., Ritz-De Cecco, A., Czeisler, C. A., & Dijk, D. J. (2004). Low-dose repeated caffeine administration for circadian-phase-dependent performance degradation during extended wakefulness. *Sleep*, 27, 374-381.
- Young, T., Palta, M., Dempsey, J., Skatrud, J., Weber, S., & Badr, S. (1993). The occurrence of sleep-disordered breathing among middle-aged adults. *New England Journal of Medicine*, 328(17), 1230-1235.