



## Jail Staffing Analysis Articles, 2005 - 2009

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## **Staffing Analysis- New Methods Provide More “Relief”**

As published in *Sheriff Magazine*, November-December 2005. P.54

Rod Miller and Mark J. Wulff

### **Introduction**

Jail staff costs constitute more than two-thirds of annual jail operating costs. Managing this valuable, critical and costly resource poses challenges for jail managers and policymakers. But there have been some advances in jail staffing analysis that are seeing the old “shift relief factor” methodology, on which jail managers have relied, now giving way to a new, flexible tool.

In 1987, the National Institute of Corrections (NIC) offered a new resource, the *NIC Staffing Analysis Workbook for Jails, First Edition*. Written for NIC by Rod Miller and Dennis R. Liebert, the *NIC Workbook* described a new, systematic approach to staffing analysis and presented new methodologies to the field, which a number of jails subsequently embraced. NIC updated it in 2001; the NIC Academy used the second edition in developing its first jail e-learning course, now available on line and on CD-ROM.<sup>1</sup>

As jurisdictions apply the NIC process and methods, the refinements, improvements and innovations that they developed along the way are leading to some rather exciting developments in the field. This article describes the experience of Montgomery County, MD, as a team of jail staff and officials examined the linchpin of the staffing analysis process: the calculation of accurate "net annual work hours" (NAWH) for every custody-oriented classification of staff.

### **Staffing Analysis Process**

The staffing analysis methodology described in NIC's *Workbook* involves 10 sequential steps:

#### **The Staffing Analysis Process**

- **Step 1. Profile the Jail-** describing the context in which staffing occurs
- **Step 2. Calculate Net Annual Work Hours-** understanding how many hours we really derive from each full time position, and getting the data and math right
- **Step 3. Develop a Facility Activity Schedule-** examining hour-to-hour levels of activity in the jail, and identifying opportunities for new efficiencies
- **Step 4. Develop the Staff Coverage Plan-** determining what type of staff are needed, where, and when, and with what exceptions
- **Step 5. Complete a Staff Summary-** a first look at the level of staffing
- **Step 6. Develop a Schedule-** finding efficient and effective ways to deploy staff to meet coverage needs

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<sup>1</sup> <http://nicic.org/Services/eLearning.aspx>

- **Step 7. Evaluate, Revise, and Improve the Plan-** the equalizer-- identifying deficiencies in the plan before it is implemented
- **Step 8. Calculate Operational Costs-** asking for the right amount of resources
- **Step 9. Prepare a Report-** documenting your findings
- **Step 10. Implement the Plan and Monitor the Results-** continuously fine tuning the plan as it is implemented

Although the *Second Edition* expanded the seven-step process introduced in the *First Edition*, it also trimmed the content of the *Workbook* substantially and eliminated several forms and checklists, among them: Form 1A: Profile the Jail; Form 2A: Intermittent Activities/Operation Chart, now simplified as Form B, Facility Activity Schedule; Form 3A: Staff Assignment and Coverage, simplified and combined Form 3D, Staff Assignment Summary; Form 3B: Graph of Staff Assignment; Form 4A: Weekly Scheduling Summary; Form 4B: 2-Month Master Schedule; Form 5A: Master Evaluation Checklist; Form 5B: ACA Standards Checklist; Form 5C: Time/Task Analysis; and Form 7A: Monitoring Checklist.

Many practitioners still use some of these earlier forms and checklists, which are available from NIC through its Information Center (<http://www.nicic.org/pubs/pre/006510.pdf>).

### **Continually Improving the Process and Methodology**

As more practitioners apply the staffing analysis process, they are developing important refinements and improvements.

For example, one county wanted to find a balance between the complex Intermittent Activities chart in the *First Edition*, and the somewhat simplistic Facility Activity Schedule in the *Second Edition*. They created an Excel spreadsheet that displayed the various intermittent activities that occur in the jail by half-hour increments. They assigned a value, or "weight," to each activity that reflected the extent to which jail operations were impacted. A higher value indicated a greater impact. Using a scale of 1 to 5, they might assign meal service a "4," shift change a "5," and a more localized activity such as an attorney visit a "1."

After the spreadsheet was completed, they totaled the values in each column (a column represented a half-hour block of time), similar to the *First Edition* chart. These totals were converted into a chart that graphically demonstrated the ups and downs of hourly and daily jail operations. This allowed them to focus on the high points, when staff was likely to be over-taxed, and the low points, when staff might not be fully occupied. By comparing activity levels in the jail to staffing levels, it is possible to quickly identify inconsistencies. That kind of analysis can be the impetus for any needed changes in procedures and scheduling in the jail, thereby improving efficiency in jail operations.

A sample of this enhanced activities form is available online, along with samples of a weighted form, at: [www.correction.org](http://www.correction.org) Other forms and tools related to the staffing analysis process are also available at that site.

## **From "Relief Factor" to Net Annual Work Hours**

In 1987, the NIC *Workbook* introduced a new staffing analysis term and concept, the "Net Annual Work Hour" (NAWH). Many practitioners have successfully applied the NAWH methodology to their own jail operations, finding it to be an important new staffing and budgeting tool. The NAWH method eliminates the need calculate various "relief factors."

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 accurate, 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 2 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. 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 exacting attention to detail.

By calculating the "Net Annual Work Hours" (NAWH) for each classification of staff and at each facility, the budget requirements for any number of operational practices may be easily and accurately estimated. A NAWH calculation answers the question "How many hours is a typical officer (or other staff classification) available to be scheduled for duty handling mandatory post coverage 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.

Figure 1 shows how easy it is to use the NAWH method to identify budget requirements for a diverse set of posts and positions.

Figure 1 demonstrates many advantages of the Net Annual Work Hour 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 FTE's are required in the budget to cover the same number of hours in a year.

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 days per week can be varied, but the NAWH is a common denominator to consistently determine budget needs. Imagine

trying to calculate separate "relief factors" for the situations posted in Figure 1. Not only would it be very difficult, it would likely be less accurate.

**Figure 1: Samples of NAWH Use for Variety of Posts and Positions**

	A	B	C	D	E	F
Post or Relieved Position	Number of Hours Post is Operated Each Day	Number of Days Post is Operated Each Week	Number of Hours/Year Needed to Operate Post (A times B times 52.14 weeks in a year)	Net Annual Work Hours for Classif. of Staff Used to Operate the Post	Number of Full-Time Equivalent Staff Needed in Budget to Provide Coverage (C divided by D)	Classification of Staff Assigned to Post
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

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 DOCR operations.

**SUMMARY**

Calculating accurate Net Annual Work Hours pays off in many ways. Doing it right demands a lot of time and an exacting attention to detail, but the results are worth it and will be realized year after year. In the next issue of *Sheriff* magazine we will roll up our sleeves and provide detailed guidance, using a Maryland county as a case study.

Staffing analysis methods are evolving. There is room for improvement, enhancement, and new creative approaches. Practitioners are encouraged to report their experiences and their innovations so that they may be shared with their colleagues.

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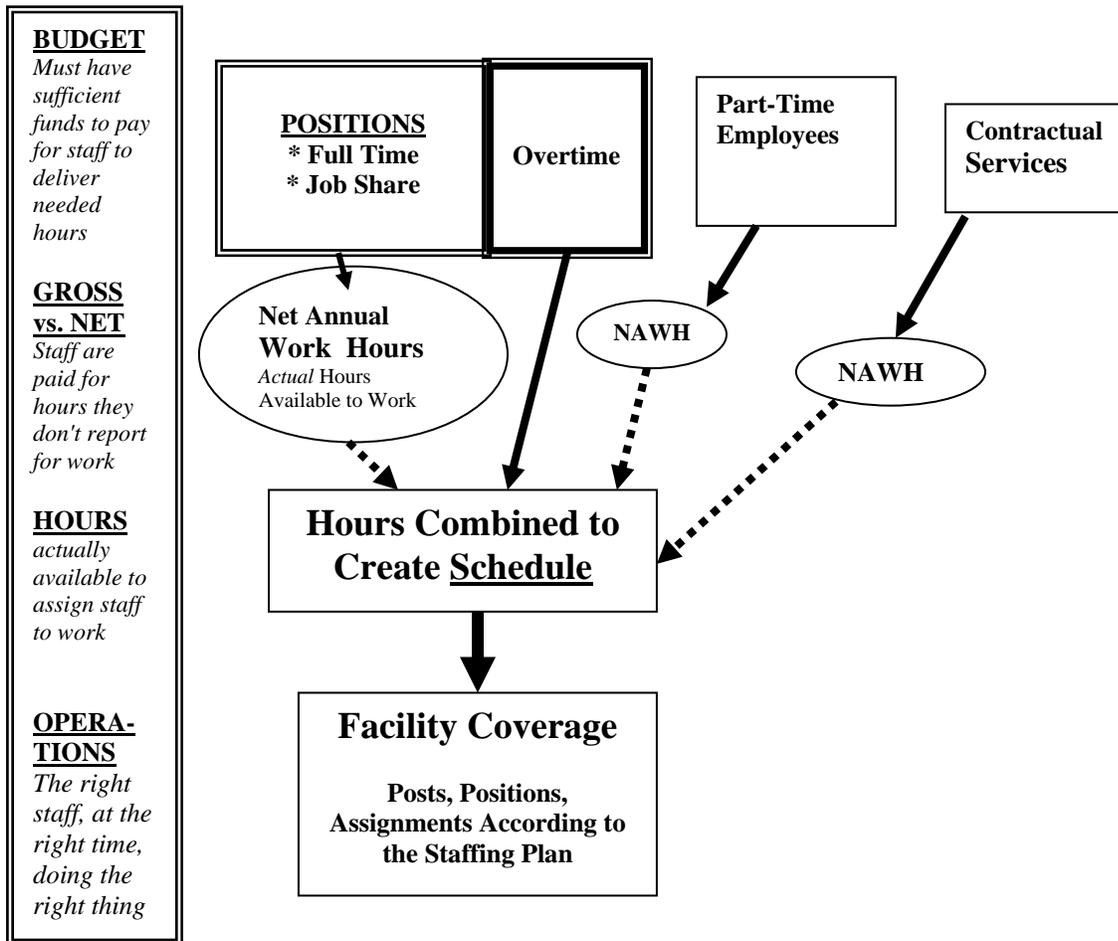
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***From Budget to Actual Operations***

(this figure was not included in the final version of the article due to space limitations)



## **Staffing Analysis-- New Method Accurately Converts Posts to Budgets**

As published in *Sheriff Magazine*, January-February 2006. P. 34

Rod Miller and Mark J. Wulff

### **Introduction**

In our first article in this series<sup>1</sup> we underscored the importance of adequate and efficient staffing and introduced the methodology that has been developed by the National Institute of Corrections (NIC).<sup>2</sup> One of the innovations introduced by NIC is the “Net Annual Work Hours” (NAWH) methodology that replaced the old shift relief factor calculations. This new tool has proven to be more accurate in converting staffing practices to budget requirements.

### **Staffing Analysis Process**

The methodology described in NIC's *Workbook* involves 10 sequential steps:

#### **The NIC Staffing Analysis Process**

- **Step 1:** Profile the Jail
- **Step 2:** Calculate Net Annual Work Hours
- **Step 3:** Develop a Facility Activity Schedule
- **Step 4:** Develop the Staff Coverage Plan
- **Step 5:** Complete a Staff Summary
- **Step 6:** Develop a Schedule
- **Step 7:** Evaluate, Revise, and Improve the Plan
- **Step 8:** Calculate Operational Costs
- **Step 9:** Prepare a Report
- **Step 10:** Implement the Plan and Monitor the Results

This article focuses on the experience of Montgomery County, Md, as it implemented Step 2, Net Annual Work Hours, for the first time.

### **A Participatory Process**

Several Montgomery County Department of Correction and Rehabilitation (MCDOCR) staff and officials were involved with the initial NAWH calculations, including the chief of administration, the human resources manager, the chief of security for the new correctional facility, the chief of security for the detention facility, and the pre-release center supervisor.

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<sup>1</sup> *Staffing Analysis- New Methods Provide More “Relief;” Sheriff Magazine*, National Sheriffs’ Association, vol. 57, no. 61, November-December 2005.

<sup>2</sup> Miller, Rod and Dennis R. Liebert, *NIC Staffing Analysis Workbook for Jails, First Edition*. National Institute of Corrections, Washington, D.C. 1987. *Second Edition* published in 2001. For copies go to [www.nicic.org](http://www.nicic.org). E-learning course, available on-line or as a freestanding computer-based learning program on CD-ROM (<http://nicic.org/Services/eLearning.aspx>)

Involving more staff in the process proved effective. Their participation paid off in identifying each element that applies to the process, collecting and analyzing data, and projecting future developments. It was also helpful when it was time to explain the findings, and the resulting budget requests, to officials.

Before trying the NAWH methodology, 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 in evaluating staffing levels for its FY 2006 budget request. The County opened a state-of-the-art correctional facility in 2004 and continued to operate its older detention center. With 282 correctional officers in FY 2006, it was essential to calculate budget needs accurately.

### **Ten Percent Short**

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 10 percent *lower* than that calculated by the NAWH methodology for the initial budget submission. If the MCDOCR had used the old methodology again, it would have continued to struggle with an ongoing overtime problem that was certainly driven in a large part by the budget shortfall caused by the earlier shift relief calculations. Using the old relief factor technique, the County entered the fiscal year nearly 30 full-time-equivalent officers short-- simply because of the math. The new NAWH method 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 his or her primary post. This is not unusual for a jail in the United States, though the precise combination of reasons that take jail staff away from their posts with pay (vacation, sick time, training, military leave, etc.) is unique to each facility.

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 made the case 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 percent more staff-- not to increase deployment in the jail, but to provide sufficient funds (for the first time) to cover the staffing practices that had already been in place. The county's policy requires all posts and positions in the MCDOCR daily staffing plan to be filled, and that caused expenditures to chronically 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 because it has no part-time staff resources, which means that all short falls must be satisfied by overtime. Extensive use of overtime is not only expensive, it is also bad for the organization in other ways.

Excessive overtime leads to:

- 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
- Disciplinary actions that take up the time of the employee, the supervisor, and management

Excess mandatory overtime also undermines the department's reputation within the ranks and generates widespread morale problems.

### Using the Worksheet to Calculate NAWH

Form A in the *Second Edition Workbook* provides a template for calculating NAWH.<sup>3</sup> Montgomery County used this as a starting point. Figure 1 describes each of the factors that Montgomery County found that would cause a staff member to be away from his or her 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). (See Figure 1)

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

**Actual experience from previous 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.

Two techniques are used to refine the estimates:

**Projecting 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

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<sup>3</sup> The form, and the complete staffing analysis workbook, are available on-line at the National Institute of Corrections web site, [www.nicic.org](http://www.nicic.org). The form is also available as an Excel spreadsheet at the NIC site.

county 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.

**Figure 1: 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) <i>training received</i>	Projected, based on anticipated turnover and changes in training practices
Average Trainer Hours (staff <i>serv</i> ing as trainers)	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

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.

**Figure 2: Net Annual Work Hours (NAWH) Work Sheet for FY 2005**

Projected Net Annual Work Hours, FY 2005		A--MCDC	B--MCCF
		CO I-III & MCO Detention Center	CO I-III & MCO Correctional Facility
1	<b>TOTAL HOURS</b> contracted annually	<b>2086</b>	<b>2086</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 (see notes) training received	53	52
5B	Average Trainer Hours (staff serving as 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 2 (AD2) Union Business	0	2
10A	Admin 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>
15	<b>NET ANNUAL WORK HOURS</b> (Line 1 minus Line 14)	<b>1590</b>	<b>1526</b>
16	NAWH expressed as a "relief factor" (for reference)	5.51	5.74

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 is 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 are shown in Figure 2. Other classifications of staff were also examined by the MCDOCR but are not shown on this sample. (See Figure 2)

### SUMMARY

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.

In our next installment, we will examine another step in the staffing analysis process in more detail.

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## ***Increasing Efficiency of Jail Staff***

As published in *Sheriff Magazine*, March-April 2006. P. 48

*By Rod Miller, founder of CRS, a nonprofit organization created in 1972 to provide research, planning and publications for detention and corrections; and John Wetzel, warden of Franklin County Jail in Chambersburg, PA*

*This is the third of a series on staffing of jails. The first article appeared in the November-December 2005 issue, the second in the January-February 2006 issue. The articles reflect the 10 steps developed by the National Institute of Corrections.*

Sheriffs must manage their jail activity schedule, not let it manage them. By rigorously analyzing jail operations, sheriffs can solve staffing problems, more than likely without increasing the budget.

“Develop a Facility Activity Schedule,” the third of a 10-step program on staffing of jails as explained in a workbook by the National Institute of Corrections<sup>1</sup>, identifies all the programs, activities, support services, and security functions that take place in the jail and then charts the times they occur over the course of a typical week. This step does not record continuous activities, such as supervising inmates or booking and releasing inmates, which are covered in Step 4.

In the first edition of the NIC workbook, the process of identifying activities was done manually. The blocks of time corresponding to each intermittent activity were shaded and shaded blocks were counted and recorded at the bottom of each column.

The types of intermittent activities that should be recorded include:

- 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

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<sup>1</sup> **Staffing Analysis Workbook for Jails**, First Edition. Rod Miller and Dennis Liebert. National Institute of Corrections, Washington D.C. 1987. Second Edition published in 2003.

- Inmate transports
- Inmate work activities

The older version of the activity chart has been replaced with a spreadsheet in the *Second Edition* of the workbook. The process has improved since the Institute's workbook was first published, most recently to acknowledge that some activities carry more weight than others.

After your activities have been recorded, devise a chart that arrays them across a typical 24-hour day. This is easily done with the "total" row at the bottom of the worksheet. Figure 1 provides a graph of the activity levels with the times of shift changes.

**Figure 1: Sample Graph of Activity Levels**

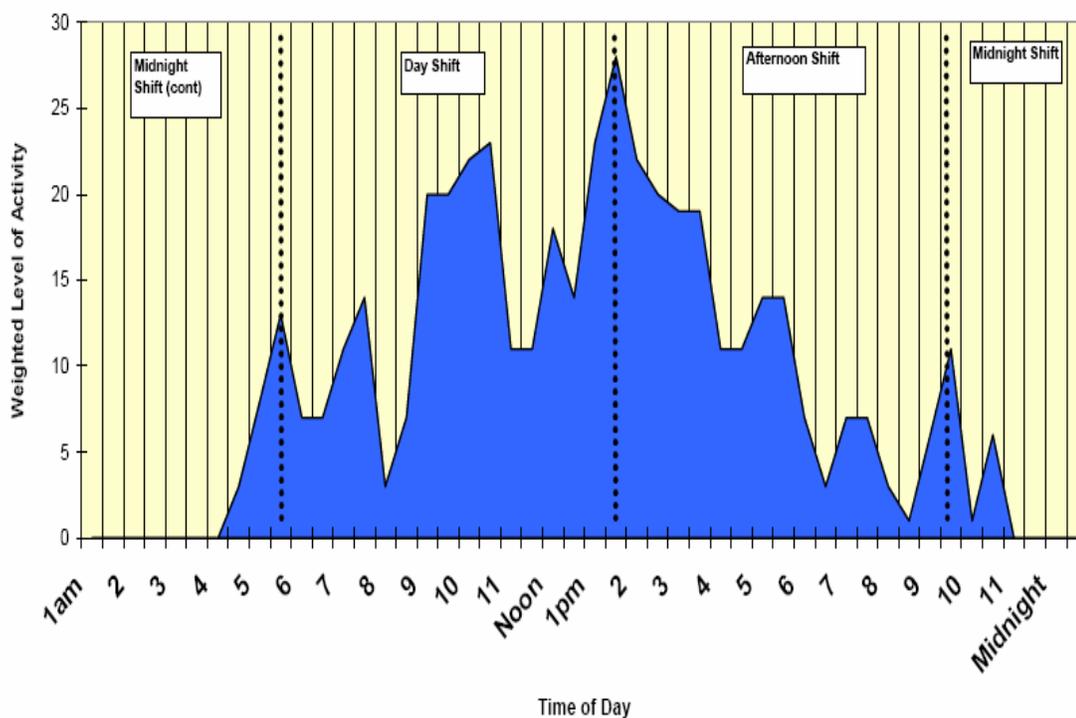
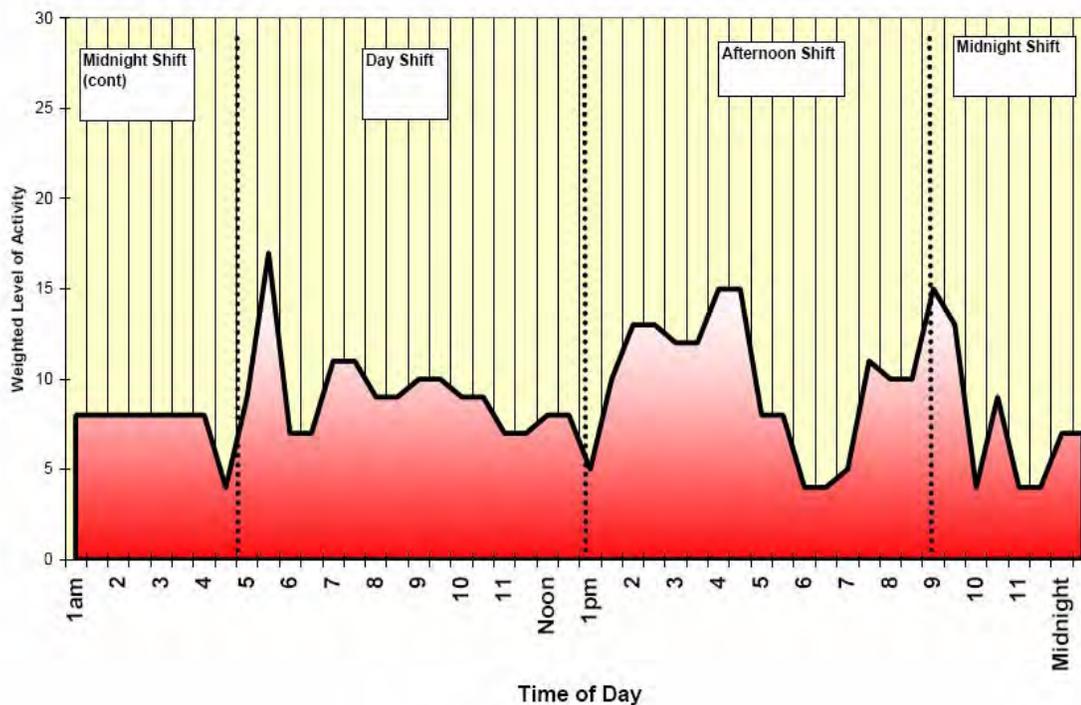


Figure 1 is fairly typical of levels of jail activity. In the sample that was used for Figure 1, staff worked 8-hour shifts that changed at 5:30 a.m., 1:30 p.m. and 9:30 pm. As you look at Figure 1 with that in mind, it becomes clear that shift schedules "straddle" higher periods of activity. Even at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

How do you assign staff to respond to such varying needs? Ask yourself, "How can we adjust our daily activities to improve the fairness and efficiency of our staffing?" Using the activities described in Figure 1, we adjusted the schedule of several activities without increasing or eliminating activities. The changes in the graph are shown in Figure 2.

**Figure 2: “After” Activity Graph**

The blue mountains and valleys depict the activity levels before the adjustments. In revising the activity schedule, we sought to:

- Reduce the scale of the peak activities.
- Moderate the level of activity on the day shift.
- Move some activities to the evening shift.
- Increase activities in the midnight shift—when staff usually is underutilized but is needed to ensure response to emergencies.
- Make the work loads for each shift more fair and equitable.

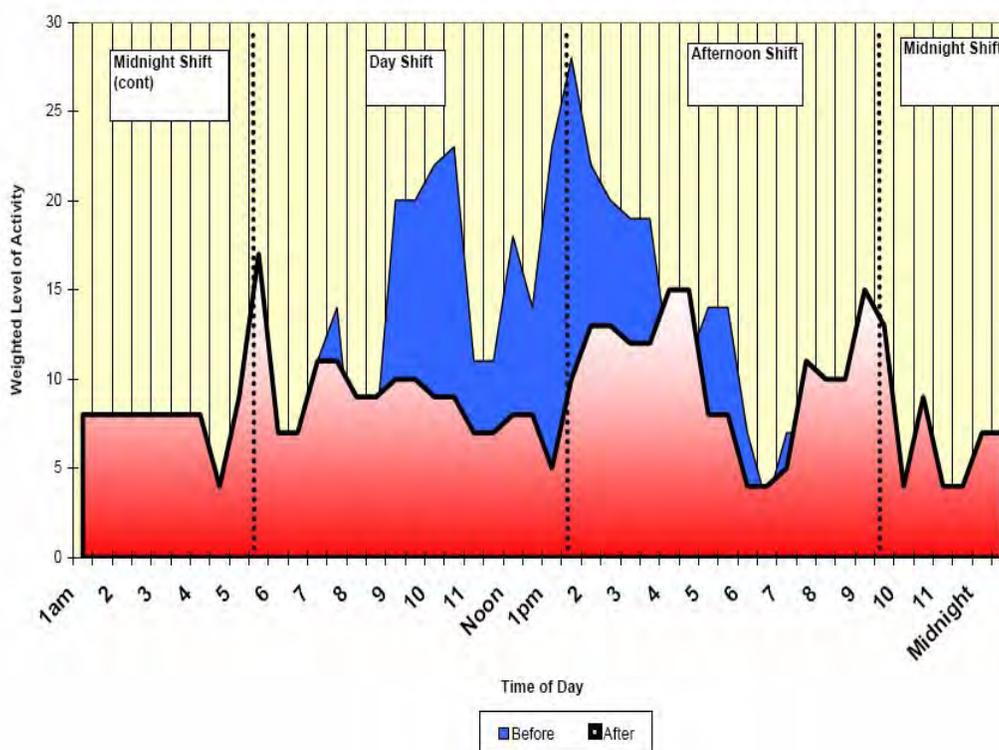
To accomplish these, we adjusted the activity schedule by:

- Moving all of the morning court-line activities to the day shift while still allowing plenty of time for the inmates to be in court on schedule.
- Moving lunch 30 minutes forward to eliminate the conflict with video court.
- Moving the evening meal 30 minutes forward to maintain the appropriate time between meals.
- Denying attorneys access to their clients during meals.
- Moving morning visiting hours to the evening.
- Moving the morning education classes, Narcotics Anonymous and Alcoholics Anonymous programs to the evening, which is more consistent with the schedule inmates will encounter in the community and which increases the number of volunteers available in the evening hours.

- Moving mail sorting activities to the midnight shift
- Moving commissary order fulfillment to the midnight shift.
- Moving commissary distribution earlier in the day shift.
- Moving cleaning, records maintenance, court-line scheduling, and rosters to the midnight shift when the level of the skeleton crew is determined by the need to respond to emergencies, but when there are often not enough activities to keep this level of staffing busy.
- Adjusting the exercise schedule to reduce conflicts with meals.

Figure 3 compares the “before” and “after” daily schedules.

**Figure 3: “Before” and “After” Daily Schedules**



Other adjustments might have been tried, such as concentrating activities on one shift (day and/or evening) that normally have higher staffing levels.

Of course, shifts are only a starting point for your coverage and scheduling activities. Staggering the starting and ending times of posts and positions might prove more efficient for some activities.

Longer shifts often prove efficient and effective. An exercise officer on a 10-hour shift might be able to accomplish all of the tasks associated with that activity.

A supervisor on a 9-hour or 10-hour shift will be able to overlap with the outgoing and incoming shift in a cost-efficient manner. The possibilities are endless.

The staffing analysis process will identify many ways that you can improve your current practices and “work smarter.” Step 3 encourages you to take control of your daily jail activities to make staff work loads more fair, equitable and efficient.

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Dane County Sheriff Gray Hamblin marks staff posts on the board during a three-day staffing analysis training program sponsored by the National Institute of Corrections.

## **Profiling Helps Improve Staffing**

As published in *Sheriff Magazine*, May-June 2006. P. 8

*By Rod Miller, founder of CRS, a nonprofit organization created in 1972 to provide research, planning and publications for detention and corrections; and John Wetzel, warden of Franklin County Jail in Chambersburg, PA*

*This is the fourth of an indefinite series on staffing of jails. The first three articles appeared November 2005, and January and March 2006. The articles reflect the ten steps developed by the National Institute of Corrections.*

Face it. Most of us pay attention to staffing when it becomes a problem. The methodology<sup>1</sup> developed by the National Institute of Corrections has proven successful, whether applied proactively or as a problem-solving technique.

### **Identifying and Involving Stakeholders**

Developing and implementing lasting improvements in staffing practices requires the efforts and support of all who have a stake in jail operations, primarily the following:

- Sheriff, correctional director, or other official responsible for the jail.
- Jail administrator.
- Other jail command staff.
- Jail 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
- Personnel/human resource managers.
- Labor union representatives
- Jail inspection officials.

You might consider broadening this list to include those with an interest in the inmates and their success after release from jail. Re-entry efforts are gaining support.

Participants in a recent training sponsored by the National Institute of Corrections identified the following as stakeholders in jail operations:

- Jail civilian staff
- Jail service providers
- Community service providers

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<sup>1</sup> **Staffing Analysis Workbook for Jails**, First Edition. Rod Miller and Dennis Liebert. National Institute of Corrections, Washington D.C. 1987. Second Edition published in 2003.

- Workforce/employment agencies
- Business community
- Inmate advocates and families
- Religious community
- Educators and training providers

At first you might wonder why some of these stakeholders are on the list. Religious entities, for example, are affected by staffing practices when they encounter difficulty visiting inmates, or conducting services at the jail. Also, faith-based initiatives in many communities work with inmates before and after their release. Advocates and families are acutely concerned with the overall safety of the jail. Connections between stakeholders and the jail must be identified and respected.

Many sheriffs and jail managers have found that it is not question of “if” stakeholders will weigh in on jail operations, but rather “when” and “how” they will weigh in. 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
- Seek their support for acquiring 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 should be given meaningful opportunities to shape the staffing plan. Participation may be secured by forming a team to conduct the staffing analysis, and 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 stakeholders have *meaningful* opportunities to participate and have their ideas seriously considered.

### **Profiling the Jail**

Jail managers must adjust to change daily, often involving things over which they have little or no control, such as crime, arrests, bail and release, and sentencing. Creating a profile of the jail, one of the initial steps in the staffing analysis methodology of the National Institute of Corrections, helps cope with change.

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 do not have the same understanding of the jail setting and its operation.

It is up to you to paint an accurate picture.

Only with an understanding of the jail context, will stakeholders be able to participate fully in the staffing analysis process and in the recommendations that follow.

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 over time. We adjust our operations in smaller increments. 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 clear perspective and promote creative change.

This article explores the Step One, which provides an essential foundation for the creative approaches that are implemented in the subsequent steps.

The first step in profiling the jail 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 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 essential in a comprehensive staffing analysis. The profile may be needed to justify requests to funding sources, or even in court. Also, subsequent staffing analyses should review and update the previous profile.

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 such as age, race, sex, residence, charge, and judicial status.
- Number and types of classifications and housing separations.
- Mission statement.
- Facility design (floor plan).
- Location and condition of equipment such as closed-circuit television, and electronic detection systems.
- Organizational chart, span of control, management philosophy.

- Staffing plan, schedule, shift rosters.
- Number and type of critical incidents.
- Personnel agreements, union contracts.
- State and professional standards.
- Applicable court decisions.
- Latest inspection reports.
- Service contracts in effect.
- Recent problems experienced with facility operations.
- Issues to be addressed by a staffing analysis.

Collecting, analyzing, and logically arranging this information will lay the foundation for the staffing analysis. Consider asking middle management and line-staff to help present the 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. It may also prove useful for other activities, such as managing jail crowding.

### **Inmate Data**

Many jurisdictions have used this step in the staffing analysis process to expand their analysis of inmate data. “Length of stay” is a good example of data that is often poorly analyzed.

Jail managers know that average length of stay is anything but average. When we attempt to describe our inmate population in broad terms, like average length of stay, we mislead the stakeholders and the public who need to have a clear understanding of jail dynamics.

Figure 1 describes a typical jail population in terms of length of stay, but it also compares the inmate admissions to the number of detention days accrued.

For example, nearly 65 percent of the inmates admitted to the jail spent one day or less in confinement, but these inmates accounted for only 1.2% of the detention days.

The numbers under “admissions” address the volume of inmates who are admitted, not the impact they have on jail beds.

But the numbers under “detention days” provide a view of the jail that is more like a “snapshot” of a typical day.

The *average* length of stay for the inmates described in Figure 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 Figure 1 demonstrates how misleading the average can be.

In fact, if you take a snapshot of this jail on a typical day, 94 percent of the inmates will spend 11 *or more days* in confinement and 87 percent of the inmates will spend more than 30 days.

**Figure 1: Length of Stay Data for Typical Jail**

<b>Number of Days in Confinement</b>	<b>Cumulative Percent of Admissions</b>	<b>Cumulative Percent of Detention Days</b>
<b>Less than 1 day</b>	47%	Less than 1%
<b>1 day</b>	64%	1%
<b>2 days</b>	73%	2%
<b>3 days</b>	76%	3%
<b>4 days</b>	77%	3%
<b>5 days</b>	79%	3%
<b>6 - 10 days</b>	82%	6%
<b>11-30 days</b>	88%	13%
<b>31-60</b>	92%	26%
<b>61-90</b>	94%	39%
<b>91-120</b>	96%	52%
<b>121-150</b>	97%	62%
<b>151-180</b>	98%	70%
<b>181-365</b>	99%	95%
<b>366-548</b>	100%	99%
<b>549+</b>	100%	100%

Figure 2 presents the data from Figure 1 in two graphs that compare and contrast length of stay in terms of admissions and beds used (detention days).

**Figure 2: Comparison Charts Based on Length of Stay**

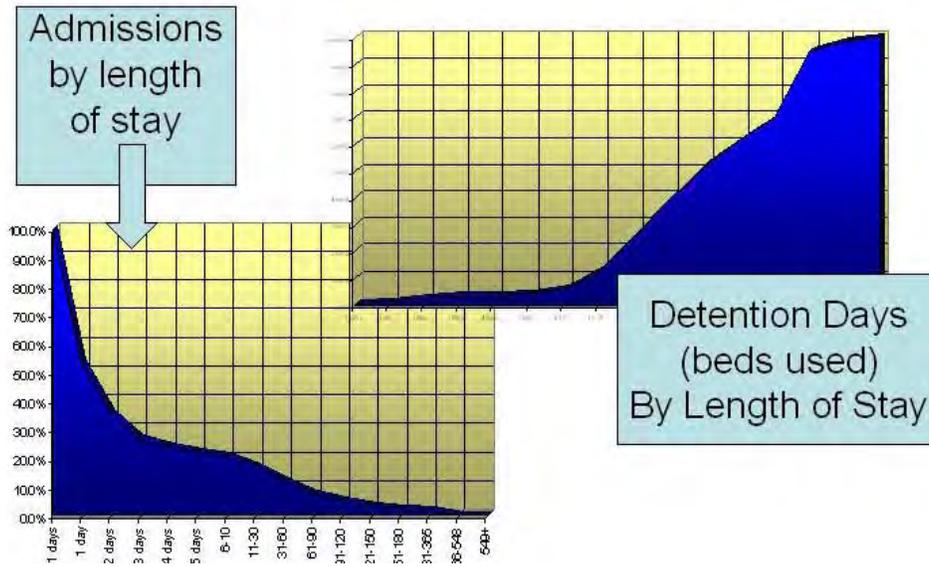
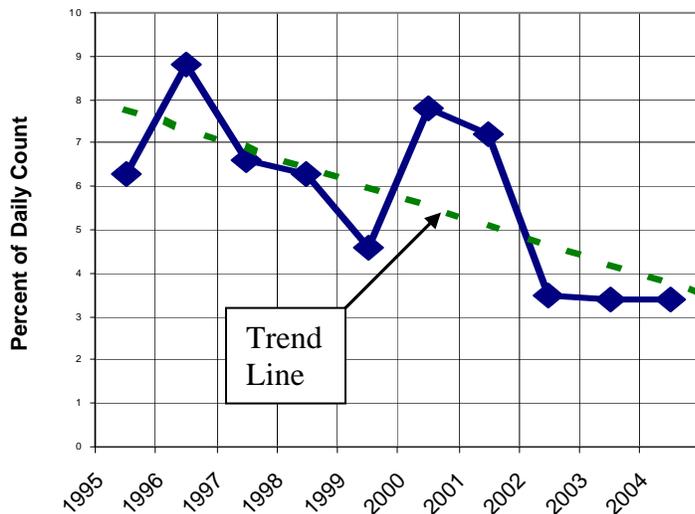


Figure 3 provides another example of the value of examining data during this early stage of the staffing analysis process.

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, as shown by the trend line on the chart.

**Figure 3: Percent of Daily Population Convicted of “County” Offenses**



The insights in Figure 3 have many implications for jail operations. First, county-sentenced inmates are considered the lowest-risk offenders, having been convicted of relatively minor offenses.

These inmates requires less supervision. They also comprise the majority of the inmate workforce. County officials used this insight as an example of the steady hardening of the inmate population in recent years.

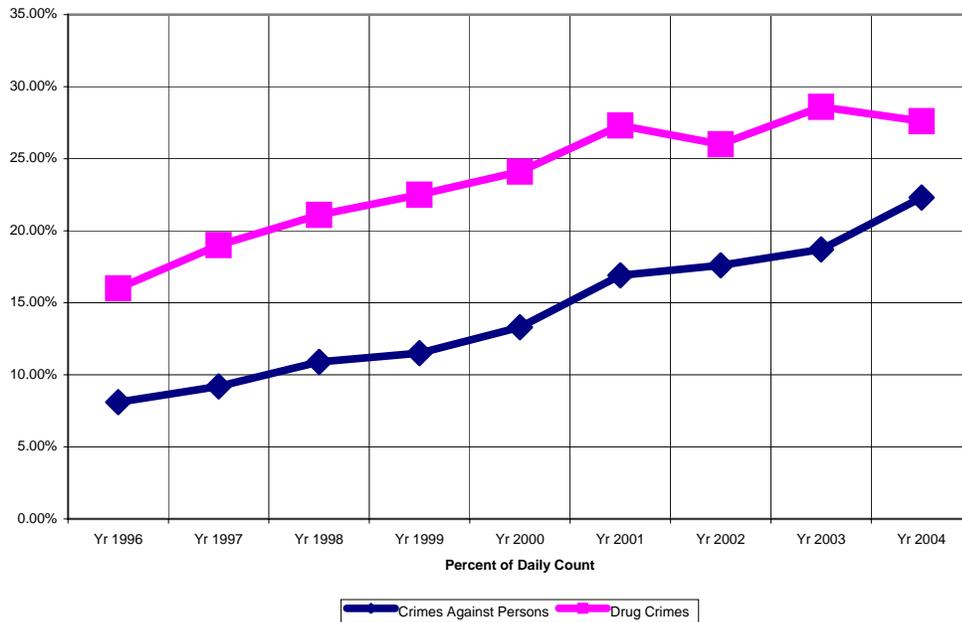
As the jail became more crowded, these low-risk inmates were an easy target for alternatives to confinement that would reduce crowding, such as day reporting, probation, and other community based sanctions.

Another staffing implication from this data is that the supply of inmate-workers is dwindling, possibly leaving tasks undone.

Nearly 20 percent of all jail inmates spend six or more hours each day working in our jails.<sup>2</sup> In order to maintain the inmate workforce, the jail will have to use less-desirable inmates, including pretrial detainees, who will require more supervision as they work.

Figure 4 provides another view of the trends in the sample jail’s population.

**Figure 4: Type of Charge**



Significant staffing implications may be derived from this data, including growing concerns about a more violent inmate population, changing contraband concerns and increased demand for medical services.

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

## Summary

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

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## Think Outside the Schedule: Determine Coverage Needs

*By Rod Miller, founder of CRS, a nonprofit organization created in 1972 to provide research, planning and publications for detention and corrections, and John Wetzel, warden of Franklin County Jail in Chambersburg, PA*

*This is the fifth of a series on staffing of jails. The articles explore the jail staffing analysis methodology developed by the National Institute of Corrections and enhancements that have been developed since NIC's latest workbook was published. The first four articles addressed the calculation of "Net Annual Work Hours," the development of a "Facility Activity Schedule," and "Using Participation and Profiling to Improve Jail Staffing." This article examines the process of determining staff coverage needs.*

In many jails, the tail is wagging the dog. Staff *schedules* have evolved and have been given priority to the point that the underlying staffing *needs* are sometimes not being met. More often, schedules provide significantly more staff than are actually needed a various times, placing a strain on budgets and staff. In a perfect world (which of course none of us live in), *needs* are identified and then *staff schedules* are devised to respond efficiently to the needs. Absent that perfect world, we challenge you to look at your needs, separate from your current staff schedule.

This series of articles builds on the groundbreaking staffing analysis methodology created by the National Institute of Corrections (NIC) and describes many enhancements developed since the NIC *Workbook*<sup>1</sup> was last revised.

The methodology developed by NIC promotes a proactive and creative approach that has proven successful in counties of all sizes. In previous articles we have addressed the first three steps that comprise the 10-step methodology created by NIC:

- *Step 1. Profile the Jail*
- *Step 2. Calculate Net Annual Work Hours (first and second articles)*
- *Step 3. Develop a Facility Activity Schedule (third article)*
- *Step 4. Develop the Staff Coverage Plan*
- *Step 5. Complete a Staff Summary*
- *Step 6. Develop a Schedule*
- *Step 7. Evaluate, Revise, and Improve the Plan*
- *Step 8. Calculate Operational Costs*
- *Step 9. Prepare a Report*
- *Step 10. Implement the Plan and Monitor the Results*

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<sup>1</sup> **Staffing Analysis Workbook for Jails**, First Edition. Rod Miller and Dennis Liebert. National Institute of Corrections, Washington D.C. 1987. Second Edition published in 2003.

The fourth step in the staffing analysis process focuses on the actual needs for staff at each hour of the day. Throughout this step you must attempt to ignore current staff schedules and examine:

- what type of staff members are needed
- when (exact hours of need and days of the week)
- where (location in the facility)

*A reminder about this process.* Although it is comprised of a series of steps, you will often find it advisable to take a step or two backward to fix a problem that you discover in a subsequent step. In this coverage step, you will likely identify additional improvements and efficiencies in your daily operations. A “spike” in the coverage chart might suggest another refinement in your daily activities plan (Step 3). Similarly, coverage irregularities may prompt you to go back and reconsider some of your underlying policies, procedures and practices that were identified in Step 1. Remember that you control many aspects of the jail’s daily operations, and you should exercise this authority to “work smarter.”

Form C from the *Workbook* provides a useful tool for developing a coverage plan. The version of Form C that was presented in the Second Edition has been significantly improved as it has been applied in various facilities. Several enhancements were created by a group of jail administrators who participated in an NIC-sponsored staffing analysis training event in Phoenix.

To accomplish this step, you will use the materials and insights that you assembled in Step 1 (profile of the facility including facility layouts, mission and such), Step 2 (Net Annual Work Hours) and Step 3 (facility activities).

Have a copy of the facility floor plan in front of you when you start to draft Form C. In the first column (A) of the form you will record an identifying code, and then you will mark the location of the corresponding activity on the floor plan. Describe the activity (or post) in Column B.

Create a new line for each new activity and for each block of time associated with an activity. Note that in the sample in Figure 1, there are three lines for “staff breaks and relief” because there are three different blocks of time associated with this activity.

Column C identifies the classification of staff who will be assigned to each activity, such as Correctional Officer 1 (CO1) or sergeant. Describe the actual hours for which coverage is needed in Column D, and be sure to record only the needs-- not what might be currently scheduled. Column E reports the number of hours per day for each activity, and the number of days per week is shown in Column F. If you are using the Excel forms that are available, Columns G (total hours per week) and H (total hours per year) will be automatically calculated.

**Figure 1: Sample of Coverage Form**

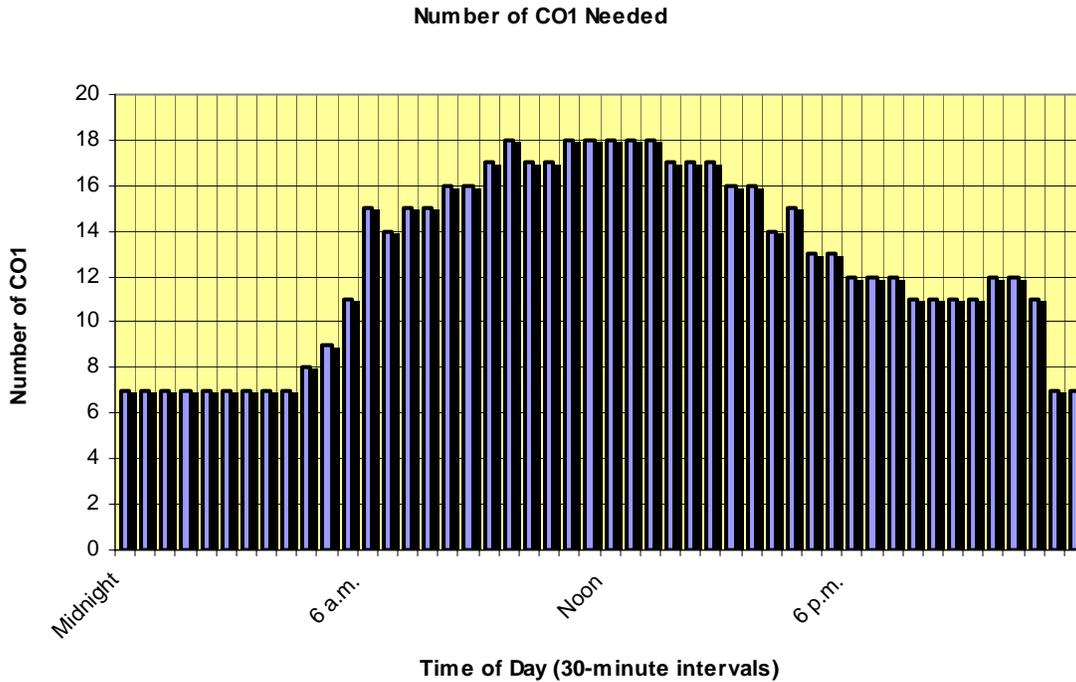
Sample of FORM C: Coverage Needs								
A	B	C	D	E	F	G	H	I
CODE (for each post or position)	Enter each post or position, by function, in a line below (describe each)	Job Class	Hours of Coverage (e.g. 0730 to 1130)	Hours per Day	No. of Days per Week (1 to 7)	No. of Hours per Week (E x F)	No. of Hours of Coverage per Year (G x 52.14)	Is this post/posit. relieved? (Y / N)
1	Master Control	CO2	0000 to 2400	24	7	168	8760	Y
2	Housing Sub Control A	CO1	0530 to 2300	17.5	7	122.5	6387	Y
3	Housing Sub Control B	CO1	0530 to 2300	17.5	7	122.5	6387	Y
4	Intake and Booking Supr	Sgt	0000 to 2400	24	7	168	8760	Y
5	Intake/Booking Officer 1	CO1	0500 to 1700	14	5	70	3650	Y
6	Int/Book Off 2 (weekend)	CO1	0000 to 1800	18	2	36	1877	Y
7	Classification Director	Lt		8	5	40	2086	N
8	Classification Officer	CO2	0800 to 0400	8	7	56	2920	Y
9	Exercise/Rec Officer	CO2	0900 to 0300	6	6	36	1877	Y
10	Housing Pod A1 Officer	CO1	0000 to 2400	24	7	168	8760	Y
11	Housing Pod A2 Officer	CO1	0600 to 2300	17	7	119	6205	Y
12	Housing Pod A3 Officer	CO1	0600 to 2300	17	7	119	6205	Y
13	Housing Pod B1 Officer	CO1	0000 to 2400	24	7	168	8760	Y
14	Housing Pod B2 Officer	CO2	0600 to 2300	17	7	119	6205	Y
15	Housing Unit Manager	Lt		8	5	40	2086	N
16	Jail Administrator	Capt		8	5	40	2086	N
17	Rover/Escort	CO1	0000 to 2400	24	7	168	8760	Y
18	Rover/Escort #2	CO1	0530 to 2400	18	7	126	6570	Y
19	Property Manager	Sgt		8	5	40	2086	N
20	Records and Backup	CO1	2130 to 1000	12	7	84	4380	Y
21	Visiting and Programs	CO1	0930 to 2230	13	6	78	4067	Y
22	Staff Breaks and Relief	CO1	1100 to 1330	2.5	7	17.5	912	Y
23	Staff Breaks and Relief	CO1	1630 to 1900	2.5	7	17.5	912	Y
24	Staff Breaks and Relief	CO1	0430 to 0630	2	7	14	730	Y
25	Court Escort #1	CO1	0600 to 1600	10	5	50	2607	Y
26	Court Escort #2	CO1	0700 to 1700	10	5	50	2607	y

Column I is used to identify whether the activity is relieved or not. If the activity is always implemented, even when staff might be on vacation or out sick, it is considered relieved. Another way to determine if relief is required is to ask “if the person who is usually assigned to that activity or position does not report for work, does someone else take his/her place?” Many administrative positions are not relieved. Some lower-level positions are also not relieved. By identifying whether relief is provided, the calculation of Full-Time-Equivalent (FTE) staffing needs is facilitated.

The remaining columns in Form C are use to record annual hours for relieved activities, according to their staff classification (Columns J through N) and the number of FTE



**Figure 3: Graph of Coverage Levels**



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.

It is at this point that we bring back a technique that was introduced in the First Edition of the *Workbook*. By calculating the number of coverage hours for each classification of staff, we create a benchmark from which the efficiencies of schedules may be evaluated. In Step 6 you will be calculating the number of *scheduled* hours, and comparing it to coverage needs. Invariably, there will be more scheduled hours than coverage hours, but the objective is to bring these two numbers as close together as possible. An efficient schedule might require only a few percent more scheduled hours than coverage needs. At the other extreme, we have seen schedules that call for nearly 30 percent more scheduled hours than coverage needs demand.

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. The *Workbooks* provide some helpful tools to remind you of the range of issues to be

considered. These and other tools are available at a new on-line staffing analysis clearinghouse, located at [www.StaffingAnalysis.com](http://www.StaffingAnalysis.com).

### Determining Minimum Coverage Needs.

Figure 3 shows the fluctuation in the number of staff needed to operate the facility for a 24-hour day. You will note that the lowest number of staff (7) occurs late and night into the early morning, essentially when inmates are locked down for the night. It makes sense that coverage needs would fall substantially when inmates are confined to their cells for the night.

You will need to evaluate the adequacy of this “minimum staffing level” to be sure that enough staff are available to handle the tasks, activities, and unplanned contingencies that are constant throughout each day and night, seven days each week. These include but are not limited to:

- Implementing ongoing prisoner supervision (15-, 30- and 60-minute checks)
- Admitting new prisoners
- Releasing prisoners
- Supervising and controlling prisoner movement
- Providing “backup” support for emergencies ( e . g . , evacuating the building when there is a fire, and for planned uses of force such as cell extractions)
- Supervising staff
- Providing breaks for staff

The preceding narrative provides a brief introduction to the process of determining coverage. If you are able to separate your thinking from schedules, you will identify many opportunities for new efficiencies. Several resources and tools are available through the National Institute of Corrections at [www.nicic.org](http://www.nicic.org), or through a new national clearinghouse at [www.StaffingAnalysis.com](http://www.StaffingAnalysis.com). The clearinghouse is a free service provided by CRS, Incorporated, a non-profit organization ([www.correction.org](http://www.correction.org)).

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## Evaluating the Coverage Plan

*By Rod Miller, founder of CRS, a nonprofit organization created in 1972 to provide research, planning and publications for detention and corrections, and John Wetzel, warden of Franklin County Jail in Chambersburg, PA*

*This is the sixth of a series on staffing of jails. The articles explore the jail staffing analysis methodology developed by the National Institute of Corrections and enhancements that have been developed since NIC's latest workbook was published. The first five articles addressed the calculation of "Net Annual Work Hours," the development of a "Facility Activity Schedule," "Using Participation and Profiling to Improve Jail Staffing," and "Thinking Outside the Schedule: Determining Coverage Needs." This article examines the pivotal activities associated with evaluating coverage plans.*

This series of articles builds on the pioneering staffing analysis methodology created by the National Institute of Corrections (NIC) and describes many enhancements developed since the NIC *Workbook*<sup>1</sup> was last revised. The NIC methodology has been embraced by jails throughout the United States and it has also been adopted by police, fire, transportation, health care and nursing home operations.

The methodology developed by the National Institute of Corrections (NIC) promotes a proactive and creative approach that has proven successful in jurisdictions of all sizes. In previous articles we have addressed the first four steps that comprise the 10-step NIC methodology:

- *Step 1. Profile the Jail*
- *Step 2. Calculate Net Annual Work Hours (first and second articles)*
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Step 5: Complete a Staff Summary. The fifth step in the staffing analysis process is by far the easiest. It asks you to step back and look at the magnitude of coverage needs you have identified and assemble your work products up to this point in the process. In some instances, it is necessary to go back with a sharper pencil and review the coverage levels because of budget realities. Completing Step 5 provides a "reality check" before spending the time and energy evaluating your work in the next step.

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<sup>1</sup> **Staffing Analysis Workbook for Jails**, First Edition. Rod Miller and Dennis Liebert. National Institute of Corrections, Washington D.C. 1987. Second Edition published in 2003.

A New Step 6. In the Second Edition of the *Workbook*, the sixth step involves scheduling. But based on our experience with dozens of jails of all sizes in the past few years, we have concluded that the scheduling step should be delayed. Schedules allocate individual staff members to specific time periods and days of the week. Coverage needs, as described in the previous article, represent what is really needed in the jail at a given time, and provides the foundation on which an efficient schedule may be developed.

Before taking the time and expense of developing a schedule, and possibly raising the concerns of staff, it makes more sense to thoroughly evaluate your coverage needs.

You heard it here first-- there's a new Step 6 in town.

### Evaluating the Coverage Plan

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 resurrect 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
- 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 are identified, you will need to return to earlier steps in the staffing analysis process to revise your work:

- In Step 1 (Profile) you should 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

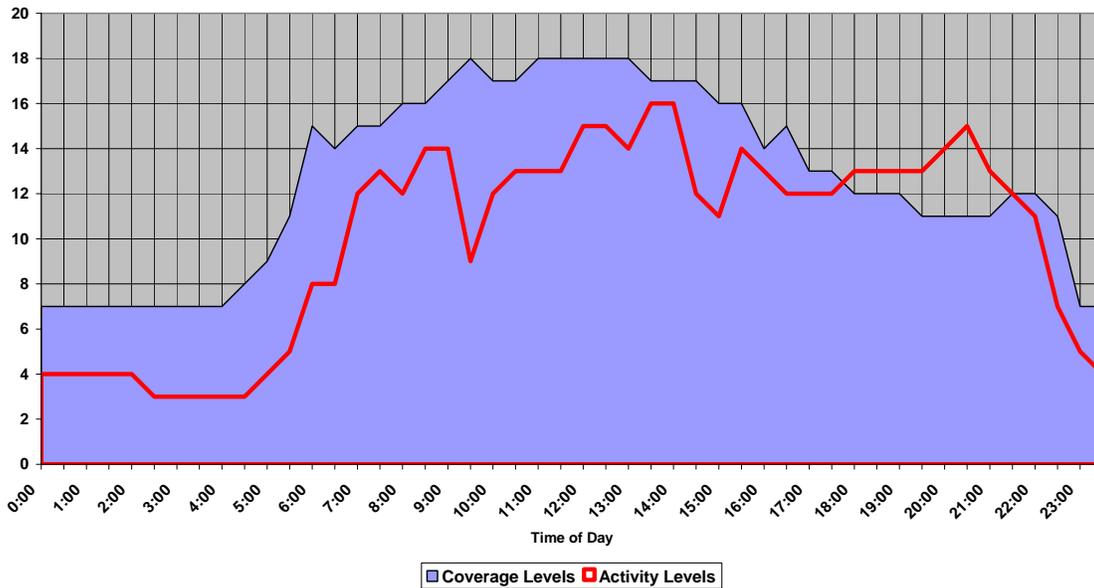
facility is used (e.g. which inmates are housed in specific areas) or many other refinements in how you operate the jail.

- In Step 2 (Net Annual Work Hours) you should consider ways to keep staff members at their posts, such as employing new training technology or reducing the use of sick time.
- In Step 3 (Activities) you should 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 4 (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 3 of activity levels should be compared to the one you made of coverage levels in Step 4. While activities and coverage do not correspond on a one-to-one basis, comparing the two graphs helps identify inconsistencies.

Figure 1: Comparison of Activity and Coverage Levels



In Figure 1 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 a little bit of 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 produce new efficiencies. Changing an activity schedule may sometimes 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 and finding ways to “work smarter” may pay off in many ways.

Figure 1 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.

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, staff 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.

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 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 1.

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

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. Professional standards have been promulgated by several organizations, including the American Correctional Association (ACA). A separate checklist has been developed around the ACA requirements.

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 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?

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.)
- 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 provides two additional evaluative resources as appendices. Each provides a more detailed and focused evaluation.

The ACA Standards Checklist converts elements of the professional standards developed by the American Correctional Association (Adult Local Detention Facilities - Fourth Edition) 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.

### EVALUATE.... REVISE, Then EVALUATE AGAIN

The changes you make in response to deficiencies may create other problems. 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 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. The First and Second editions of the *Workbook* provide some helpful tools to remind you of the range of issues to be considered. New tools have been developed in the past few years. All of these tools are available at no cost at a new on-line staffing analysis clearinghouse, located at [www.StaffingAnalysis.com](http://www.StaffingAnalysis.com). The clearinghouse is a service provided by CRS, Incorporated, a non-profit organization ([www.correction.org](http://www.correction.org)).

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## Making Staff Schedules Meet Jail Coverage Needs: *Don't Let the Tail Wag the Dog*

By Rod Miller and John Wetzel,

*This is the seventh article of a series on jail staffing analysis, exploring the methodology developed by the National Institute of Corrections and presenting enhancements developed since NIC's latest workbook<sup>1</sup> was published. This article begins our examination of the critical and sensitive process of developing and evaluating staff schedules.*

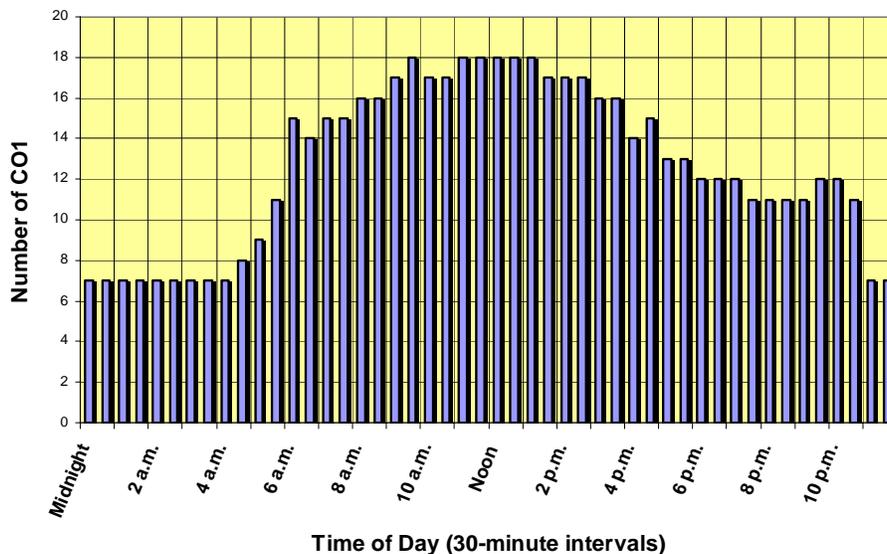
A good schedule efficiently meets jail coverage needs, but schedules often take on a life of their own and begin to drive operations, rather than respond to operations. We have encountered many jails where the schedule is the tail that is wagging the dog, by forcing operations to adapt to the schedule.

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

In an earlier article we urged readers to “think outside the schedule” and determine coverage needs without regard to scheduling issues. The result will be a coverage plan that reflects the varying needs for staff, hour to hour, day to day.

Form C from the NIC workbook develops a detailed coverage plan that looks at jail operations and staffing (coverage) needs for every 30-minutes during a week. Figure 1 shows a graph that is generated by Form C to display the ups and downs of coverage needs.

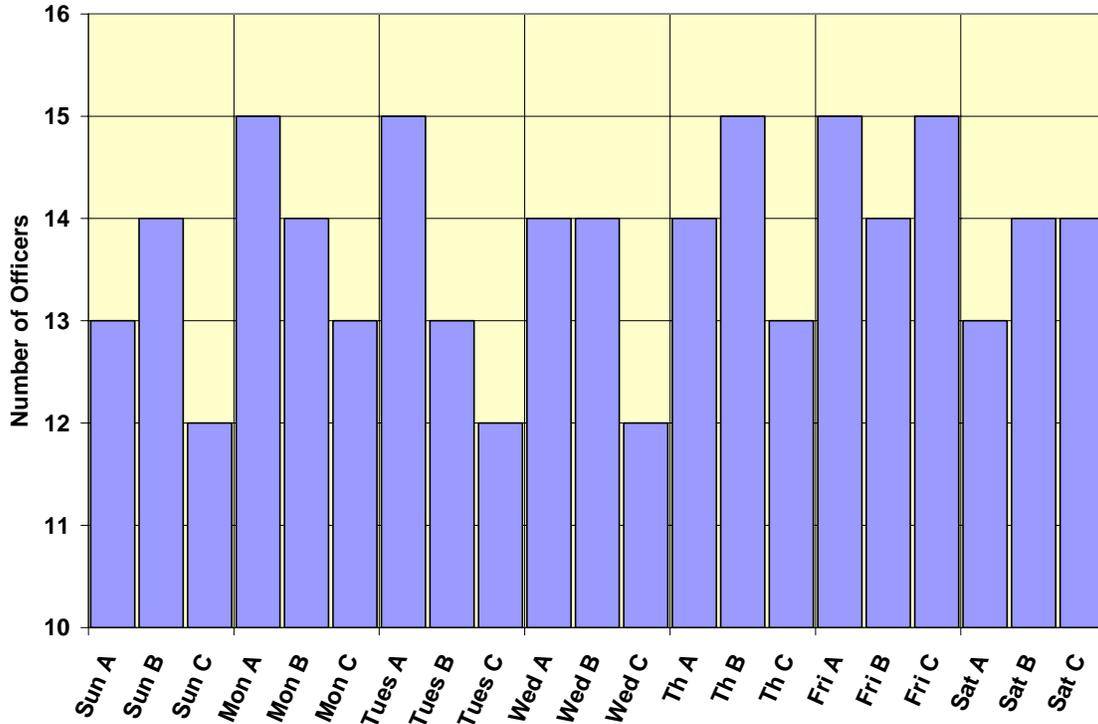
**Figure 1: Sample 1-Day Coverage Plan Using 30-Minute Increments**



<sup>1</sup> **Staffing Analysis Workbook for Jails**, First Edition. Rod Miller and Dennis Liebert. National Institute of Corrections, Washington D.C. 1987. Second Edition published 2003. The NIC methodology has been embraced by jails throughout the United States and has also been adopted by police, fire, transportation, health care and nursing home operations.

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 for this article, we will pull back a bit further and look at larger units in order to simplify our explanation of the relationship between coverage and schedules. In Figure 2 is an example of a simplified coverage plan for a week that uses 8-hour shifts (A, B, C) to define coverage needs.

**Figure 2: Simplified 7-Day Coverage Plan Using 8-Hour Shifts**



In the last article we suggested that Step 7 (Evaluating) should come before Step 6 (Scheduling). Schedules allocate individual staff members to specific time periods and days of the week, while coverage needs (Step 5) represent what is really *needed* in the jail at a given time and provide the foundation on which an efficient schedule may be developed. Before taking the time and expense of developing a schedule, and possibly raising the concerns of employees, it makes sense to be sure you have a solid consensus of coverage needs.

**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* to employees 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.

We explore each of these evaluative perspectives 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. With this article, we introduce a new tool to be used to that end, which we will call “Form E.”<sup>2</sup>

Most jails operate with three, 8-hour shifts, or two 12-hour shifts.<sup>3</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 in this article.

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

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<sup>2</sup> The NIC workbook provides forms A through D, therefore E is the logical label for this new tool.

<sup>3</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.

scheduled off day. Figure 3 provides a sample of Form E, using a shift that has 20 staff assigned to it.

**Figure 3: Sample Form E - Excerpt (Top of Form)**

Staff Member Code	Sun	Mon	Tues	Wed	Thur	Fri	Sat	Total Days Worked
1	0	1	1	1	1	1	0	5
2	0	0	1	1	1	1	1	5
3	0	1	1	1	1	1	0	5
4	0	1	1	1	1	1	0	5
5	0	1	1	1	1	1	0	5
6	0	0	1	1	1	1	1	5
7	1	0	0	1	1	1	1	5
8	1	0	0	1	1	1	1	5
9	1	1	0	0	1	1	1	5
10	1	1	0	0	1	1	1	5
11	1	1	1	0	0	1	1	5
12	1	1	1	1	0	0	1	5
(continue until all staff are shown) ▼								

1 = work day    0 = day off

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 (A). Enter the totals from the coverage plan below the scheduled coverage figures (B), and then calculate<sup>4</sup> the difference (C) between scheduled staff and coverage needs with this simple formula:

<b>Scheduled Hours <i>minus</i> Coverage Hours = Difference (plus or minus)</b>
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Figure 4 provides a sample of the bottom of Form E. This technique produces *quantifiable* results. A template for Form E is provided, along with this sample, at our national clearinghouse ([www.staffinganalysis.com](http://www.staffinganalysis.com)).

When the schedule falls below minimum coverage needs, the difference (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. 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

<sup>4</sup> Form E has this, and other formulas, embedded in the template.

**Figure 4: Sample Form E - Excerpt (Bottom of Form)**

Staff Member Code	Sun	Mon	Tues	Wed	Thur	Fri	Sat	Total Days Worked
1	0	1	1	1	1	1	0	5
▼								
19	1	1	1	1	0	0	1	5
20	1	1	1	1	1	0	0	5
<b>A. Total Scheduled</b>	<b>13</b>	<b>15</b>	<b>15</b>	<b>14</b>	<b>14</b>	<b>15</b>	<b>14</b>	<b>100 shifts scheduled</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 shifts needed</b>
<b>C. DIFFERENCE (B minus A)</b>	<b>1</b>	<b>-1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>-1</b>	<b>2</b>
<b>D. Shortfalls (Schedule is <u>less</u> than coverage needs)</b>		<b>-1</b>					<b>-1</b>	<b>-2</b>
<b>E. Excess (Schedule is <u>over</u> coverage needs)</b>	<b>1</b>		<b>1</b>	<b>1</b>		<b>1</b>		<b>+4</b>

Note that Form E posts negative numbers in one row, and positive numbers in another. This is necessary to ensure that you generate a separate count of positive and negative number, and not to combine them. The grand totals on the form indicate the number of hours under, and over, for the cycle.

The spreadsheet also provides the ability to *graphically* identify the hourly relationship between the schedule and coverage needs. The chart in Figure 4 was drawn from Rows A and B at the bottom of the spreadsheet. Whenever the schedule line falls below the coverage line, there is a problem with sufficiency.

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, doesn't that 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. We will examine the math and mechanics associated with schedules in our next article.

**Figure 5: Chart from Form E- Coverage and Schedule for 1 Shift, 1 Week**

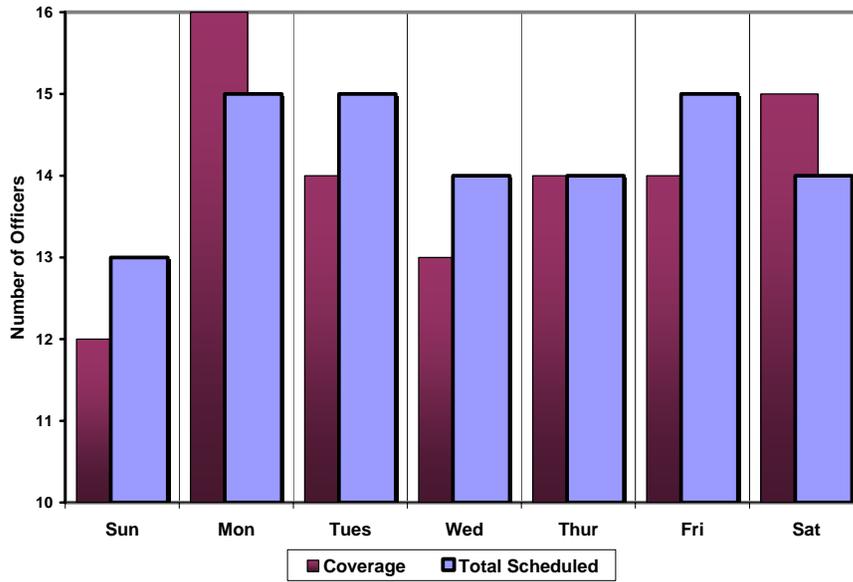
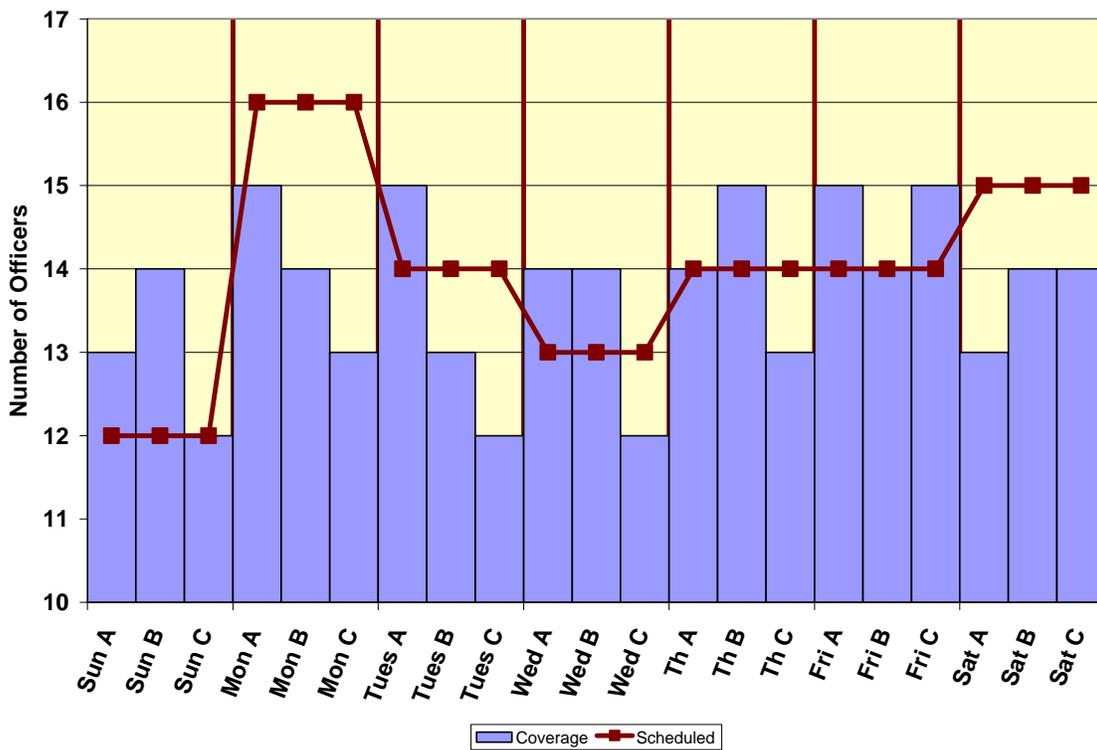


Figure 6 compares coverage and scheduled hours according to one shift for a week.

**Figure 6: Week-Long Comparison of Coverage to Schedules, By Shift (A.B.C.)**



### 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 Figure 4) suggests that the schedule is *inefficient*. The positive figures and totals in Figure 4 numerically suggest the efficiency-- or lack of efficiency. Figures 5 and 6 graphically identify the times that the schedule exceeds coverage needs by showing where the line goes above the 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 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 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 D and E come into play (Figure 4). The example in Figure 4 shows that 6 shifts fall outside of coverage needs (Row D and Row E, 2 below, 4 above). When we consider that the regular-time hours lost when we schedule extra staff (E) create the need for overtime hours, we realize that the sample schedule creates an overall premium of 9 shifts, not 6.<sup>5</sup>

### Is the Schedule Consistent?

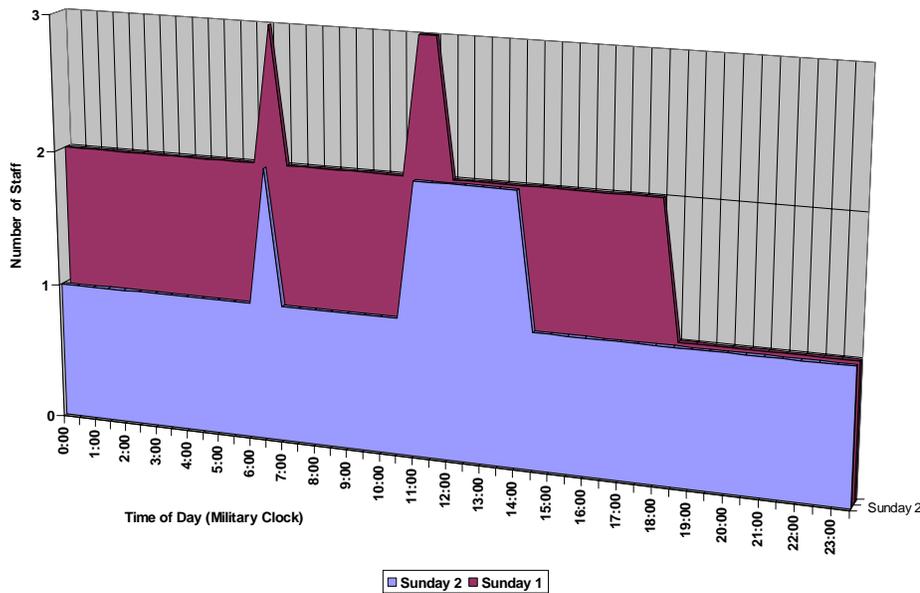
The mechanics of schedules are often deceiving. What looks simple and straightforward on paper sometimes produces erratic results from week to week during the cycle. We will explain scheduling math and mechanics in our next article. For now, consider a situation we recently encountered in a jail has 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 7 provides an example of these inconsistencies.

Figure 7 is derived 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 bypass such questions by evaluating the sufficiency and efficiency of each hour of each day against the underlying coverage needs.

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<sup>5</sup> Multiplying 6 by 1.5 yields a total of 9 shifts.

**Figure 7: Example of Inconsistent Schedule (Two Week Cycle)**  
 Scheduled hours for Week 2 are shown in front of Week 1



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. These contracts must be considered as you evaluate and improve schedules.<sup>6</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 jail 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>7</sup>

<sup>6</sup> The NIC Workbook recommends involving union representatives, along with other stakeholders, on the staffing analysis team.

- *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 key factor when your employees characterize their work conditions. If some shifts provide insufficient staff, the employees who must work on those shifts are less satisfied with their working conditions.
- *Ability to use earned time off.* Some schedules require limits on the number of employees who may schedule time off

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.

Health and performance considerations are associated with:

- Working an employee too long at one time
- Providing insufficient time between shifts to rest
- 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

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<sup>7</sup> Remember that some staff actually prefer to work afternoons or nights.

When it comes to evaluating health and performance issues, employees should be asked for their opinions, but managers should also be cautious. 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.

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

This article launched our examination of schedules, starting with 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. In the next issue we will explore the nuts-and-bolts math and mechanics associated with developing and refining schedules.

The materials identified here, along with many other resources, are available at no cost at our on-line staffing analysis clearinghouse: [www.staffinganalysis.com](http://www.staffinganalysis.com).

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<b>Glossary of Staffing Analysis Terms</b>	
<b>Coverage Plan</b>	The description of the <i>minimum</i> numbers and types of staff needed to operate the facility at each hour of each day in the week.
<b>Shift Configuration</b>	The combination of: <ul style="list-style-type: none"> <li>• Number of hours staff will work on a given shift</li> <li>• Start and end times for each shift</li> <li>• Number of days to be scheduled on and off</li> </ul> Many jails have more than one shift configuration.
<b>Schedule</b>	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.
<b>Cycle</b>	The number of consecutive days needed to reach the point at which the schedule repeats itself.

## The Math of Shift Configurations

By Rod Miller, founder of CRS, and John Wetzell, Warden of the Franklin County Jail, Chambersburg, PA

*This is the eighth article of a series on jail staffing analysis, exploring the methodology developed by the National Institute of Corrections and presenting enhancements developed since NIC's latest workbook<sup>1</sup> was published. This article continues our examination of the critical and sensitive process of developing and evaluating staff schedules.*

In the previous article we emphasized the importance of determining coverage needs before developing or evaluating schedules. 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 described methods to evaluate current and potential schedules in terms of:

- **SUFFICIENCY.** 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).
- **EFFICIENCY.** Minimizing the number of “extra” staff deployed by the schedule
- **CONSISTENCY.** Minimizing variations throughout the schedule cycle
- **ATTRACTIVENESS** to employees by meeting their needs, being considerate of their personal preferences, and offering incentives to stay with the organization.
- **HEALTH.** Promoting staff physical well-being and performance.

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)**

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<sup>1</sup> **Staffing Analysis Workbook for Jails**, First Edition. Rod Miller and Dennis Liebert. National Institute of Corrections, Washington D.C. 1987. Second Edition published 2003. The NIC methodology has been embraced by jails throughout the United States and has also been adopted by police, fire, transportation, health care and nursing home operations.

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 NIC staffing analysis methodology introduced the Net Annual Work Hours (NAWH) tool, to replace the less accurate “shift relief factor.” NAWH 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. There are many considerations associated with adopting 12-hour shifts. These will be explored in depth in a later installment of this series. For now, we will examine the characteristics of several different shift configurations.

### **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>2</sup>, or a copy may be purchased from the publisher, the Institute of Police Technology and Management.<sup>3</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

Figure 1 is drawn from *The Manager’s Guide to Alternative Work Schedules*. It summarizes the descriptive statistics for 21 different alternative schedules and allows

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<sup>2</sup> National Institute of Corrections Information Center, [www.nicic.org](http://www.nicic.org). (800) 877-1461, (303) 682-0213

<sup>3</sup> University of North Florida, 12000 Alumni Drive, Jacksonville, FL 32224-2678; <http://iptm.org>.

comparison of the features of each schedule. The chart depicts work schedules that range from 8- to 12-hour days. Scheduling patterns such as split shifts and flextime are not included on the chart, as they do not lend themselves to this type of analysis.

**Figure 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
Consecutive Time Required	-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
Workdays and Offdays in Cycle	-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
Schedule Work Cycle-	-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
Number of Workdays	-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
Number of Offdays	-Per Shift	2	2	2	2 or 3	3	3	2 or 3	3	4
	-Per Cycle	6	6	6	8	9	9	3	6	8
	-Annually	104	104	104	127	156	156	8	182	182
Weekends Off Annually	-Full	52	0 to 26	34	14	52	52	10	16	18
	-Partial	0	0 to 26	0	14	0	0	18	18	12
Number of Other Offdays	-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
Total Scheduled Hours Annually	Workdays times	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>.

**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.
- 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.
- 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, 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.

This article focused on the shift configurations, the first and biggest element of scheduling decisions. In the next issue we will examine the manner in which various shift configurations actually *schedule* individual employees and the consistency associated with shift configurations. We will also introduce a method that you may use to evaluate the consistency and efficiency of your current schedules.

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The clearinghouse is a service provided by CRS, Incorporated, a non-profit organization ([www.correction.org](http://www.correction.org)).

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<b>Glossary of Staffing Analysis Terms</b>	
<b>Coverage Plan</b>	The description of the <i>minimum</i> numbers and types of staff needed to operate the facility at each hour of each day in the week.
<b>Shift Configuration</b>	The combination of: <ul style="list-style-type: none"> <li>• Number of hours staff will work on a given shift</li> <li>• Start and end times for each shift</li> <li>• Number of days to be scheduled on and off</li> </ul> Many jails have more than one shift configuration.
<b>Schedule</b>	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.
<b>Cycle</b>	The number of consecutive days needed to reach the point at which the schedule repeats itself.
<b>RDO</b>	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.

## Measuring the Efficiency of Schedules

*Rod Miller, founder of CRS, and John Wetzel, Warden, Franklin County Jail, Chambersburg, PA*

*This is the ninth article of a series on jail staffing analysis, exploring the methodology developed by the National Institute of Corrections and presenting enhancements developed since NIC's latest workbook<sup>1</sup> was published. In this article, we focus on staff schedules again, introducing a new tool that measures 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.

Believe it or not, there are times when more employees report for duty than are needed to meet coverage needs in some jails. Of course supervisors rarely complain about this windfall, and often find creative and effective ways to use the extra hours. But when employees work their regular hours but do not address coverage needs, it usually creates a shortfall later in the fiscal year.

Before we describe efficiency methodology, let's put the budgeting process in the context of the overall staffing analysis process.

### A Schematic Diagram of the Staffing Analysis and Budgeting Process

Figure 1 describes the process through which needs are identified, coverage is determined, and the "math" of calculating Net Annual Work Hours (relief factors) and determining budget needs.

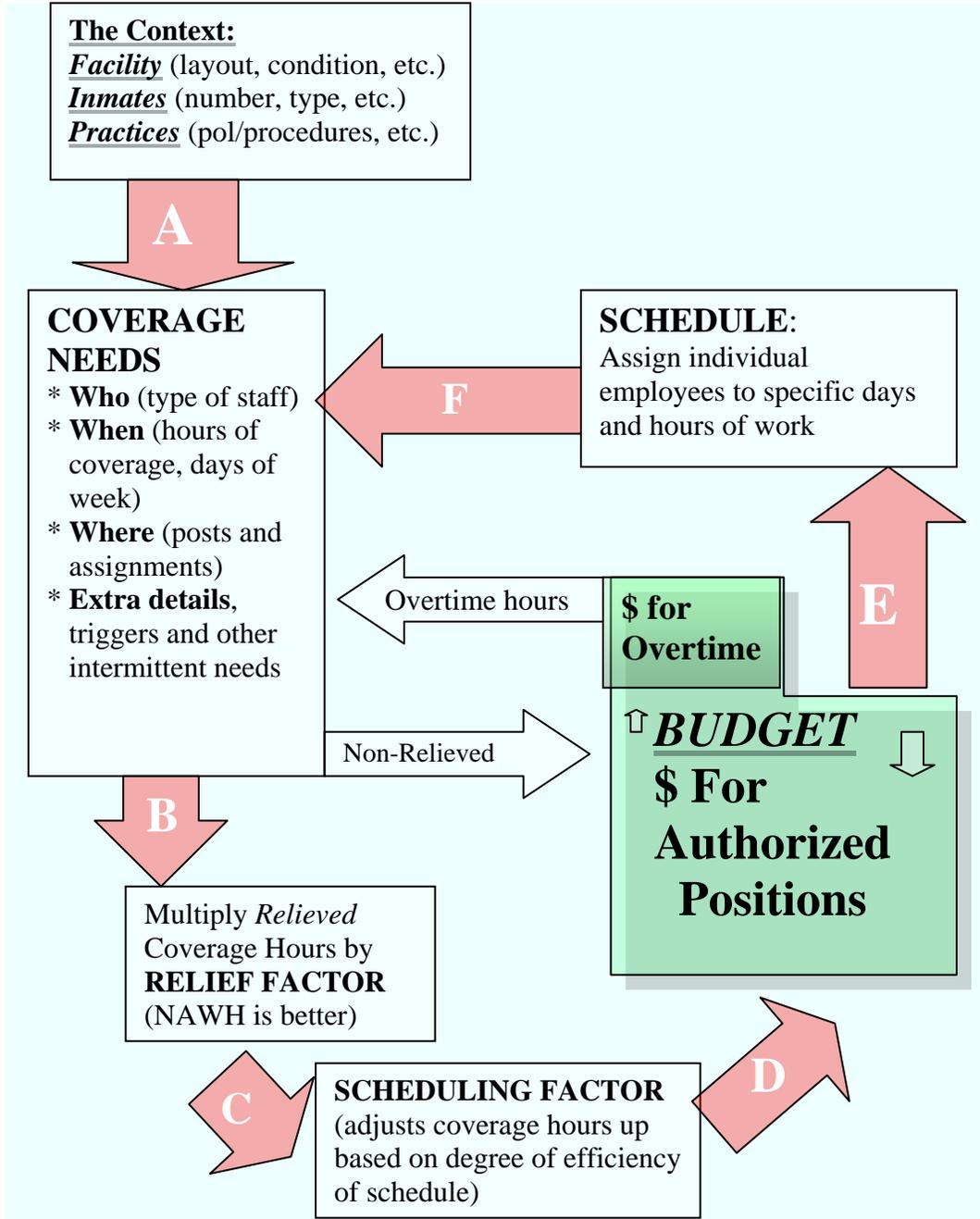
The road to providing sufficient staffing is fraught with error. The following list describes *some* of the difficulties encountered in this process, using the letters on each arrow of the flowchart to indicate the point at which the difficulties are encountered:

- A. Incomplete or inaccurate characterization of the context. Not using data fully, not identifying changes and trends. The context needs to be updated yearly in order to avoid this error.
  
- B. Underestimating coverage needs by not evaluating sufficiency. Failing to find ways to "work smarter" with what we have (such as using staffing overages to cover needed details such as training or searches). Not using data to refine coverage needs.

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**Figure 1: Staffing Analysis Flowchart**



- C. Inaccurate calculation of Net Annual Work Hours (NAWH) or “relief factor.” For example, if you have overestimated NAWH by ten percent and you have 100 FTE correctional officers, you will be 10 FTE short in your budget.
- 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.

These are just a few of the difficulties and deficiencies that may occur at *any* of these stages to reduce the adequacy of the staffing practices that are finally employed. Many jails wrestle with *most* of these issues and more.

### **Why Measure Scheduling Efficiency?**

Our focus in this article is to demonstrate how schedules vary in their efficiency and to introduce a new methodology to calculate the efficiency of schedules to inform 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**

Start by revisiting your coverage needs (Step 4 of the NIC process) to determine if they represent the "minimums" that are acceptable, or if they sometimes describe optimal staffing levels. Ask yourself 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 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

- Calling 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)

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. Another facility has a procedure for implementing “rolling lockdowns” when insufficient numbers of employees are available, confining inmates to their cells and reducing staffing levels in response.

### **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 and ensure sufficiency.<sup>2</sup> This approach rarely results in scheduling inefficiencies because the number of employees who report for duty does not exceed the minimum levels.

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<sup>2</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.

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 shifts above minimum but *either* approach may result in inefficiencies depending on the shift configuration that is used. Scheduling poses a difficult balancing act between sufficiency and efficiency.

### Shift Configurations

In the last issue we examined “shift configurations” 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 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 Figure 2, which schedules 9 employees for 8-hour shifts. The total number of employees who appear each day varies from 5 to 7.

**Figure 2: Illustration of 8-Hour Shift Schedule with 9 Employees**

Staff 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 (Figure 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.

**Figure 3: Illustration of 8-Hour Shift Schedule with 7 Employees**

Staff 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
<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>3</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.

### Measuring Schedule Efficiency

As with measuring sufficiency, the coverage plan is the foundation for measuring efficiency. If your coverage plan does not represent your minimum staffing levels, your minimums will be used instead.

When you developed your coverage plan (Step 4 of the NIC process) 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. In our seventh article, we introduced a new tool, "Form E."<sup>4</sup>

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. Figure 4 provides a sample of Form E, using a shift that has 20 staff assigned to it.

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 (A). Enter the totals from the coverage plan below the scheduled coverage figures (B), and

<sup>3</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. Another balanced shift configuration would be a 4/4, 3,3.

<sup>4</sup> The NIC workbook provides forms A through D, therefore E is the logical label for this new tool.

then calculate<sup>5</sup> the difference (C) between scheduled staff and coverage needs with this simple formula:

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

**Figure 4: Sample Form E - Excerpt (Top of Form)**

Staff Member Code	Sun	Mon	Tues	Wed	Thur	Fri	Sat	Total Days Worked
1	0	1	1	1	1	1	0	5
2	0	0	1	1	1	1	1	5
3	0	1	1	1	1	1	0	5
4	0	1	1	1	1	1	0	5
5	0	1	1	1	1	1	0	5
6	0	0	1	1	1	1	1	5
7	1	0	0	1	1	1	1	5
8	1	0	0	1	1	1	1	5
9	1	1	0	0	1	1	1	5
10	1	1	0	0	1	1	1	5
11	1	1	1	0	0	1	1	5
12	1	1	1	1	0	0	1	5
(continue until all staff are shown) ▼								

1 = work day    0 = day off

Figure 5 provides a sample of the bottom of Form E. This technique produces *quantifiable* results. A template for Form E is provided, along with this sample, at our national clearinghouse ([www.staffinganalysis.com](http://www.staffinganalysis.com)).

When the schedule falls below minimum coverage needs, the difference (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. 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

<sup>5</sup> Form E has this, and other formulas, embedded in the template.

**Figure 5: Sample Form E - Excerpt (Bottom of Form)**

Staff Member Code	Sun	Mon	Tues	Wed	Thur	Fri	Sat	Total Days Worked
1	0	1	1	1	1	1	0	5
▼								
19	1	1	1	1	0	0	1	5
20	1	1	1	1	1	0	0	5
<b>A. Total Scheduled</b>	<b>13</b>	<b>15</b>	<b>15</b>	<b>14</b>	<b>14</b>	<b>15</b>	<b>14</b>	<b>100 shifts scheduled</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 shifts needed</b>
<b>C. DIFFERENCE (B minus A)</b>	<b>1</b>	<b>-1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>-1</b>	<b>2</b>
<b>D. Shortfalls (Schedule is <u>less</u> than coverage needs)</b>		<b>-1</b>					<b>-1</b>	<b>-2</b>
<b>E. Excess (Schedule is <u>over</u> coverage needs)</b>	<b>1</b>		<b>1</b>	<b>1</b>		<b>1</b>		<b>+4</b>

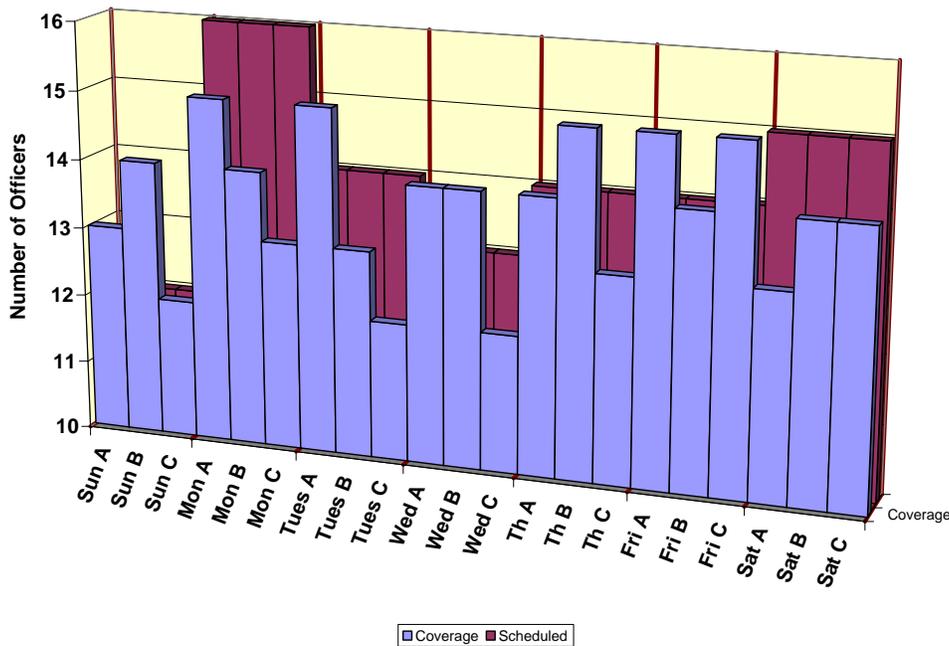
Note that Form E posts negative numbers in one row, and positive numbers in another. This is necessary to ensure that you generate a separate count of positive and negative number, and not to combine them. The grand totals on the form indicate the number of hours under, and over, for the cycle.

The spreadsheet also provides the ability to *graphically* identify the hourly relationship between the schedule and coverage needs.

**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 Figure 5) suggests that the schedule is *inefficient*. The positive figures and totals in Figure 5 numerically suggest the efficiency-- or lack of efficiency. Figure 7 graphically identifies the times that the schedule *exceeds* coverage needs by showing where columns in the rear (scheduled hours) are higher than the coverage needs in the front. The extent to which the scheduled hours in the back appear suggests the degree to which the schedule exceeds coverage needs.

**Figure 6: Coverage Needs Compared to Scheduled Hours**



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 associated with these 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 a 50% premium as overtime or compensatory time, and the costs will mount even faster.

Next time, we’ll add the “math” to these calculations by looking at some actual practices of jails around the country, and there-by showing you, how to create, a *Scheduling Factor*

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## Comparing NAWH and “Relief Factor” Calculations

*By Rod Miller, founder of CRS, and Warden John Wetzel Franklin County Jail, PA*

*This is the tenth article on jail staffing analysis, exploring the methodology developed by the National Institute of Corrections and presenting enhancements developed since NIC’s latest workbook<sup>1</sup> was published. In this article, we take a break from our examination of scheduling challenges to clarify some of the math associated with relief calculations and to introduce some new tools.*

We interrupt our examination of schedules to respond to a groundswell of requests to clarify the relationship between Net Annual Work Hours (NAWH) and the older concepts of a “Shift Relief Factor” (SRF) and “Relief Factor” (RF). This article addresses the confusion and provides examples, formulas and access to a new tool.

The NAWH methodology was introduced by NIC in 1987, providing a more accurate and versatile tool to calculate the math associated with relieved posts and positions. The end product of the NAWH calculations has many and varied uses, and is expressed as “hours” rather than “days.” Figure 1 provides a side-by-side comparison of the two methodologies.

**Figure 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 denominator to determine FTEs needed for varied coverage patterns (3) Provides guidance for shift construction and employee assignment

<sup>1</sup> **Staffing Analysis Workbook for Jails**, First Edition. Rod Miller and Dennis Liebert. National Institute of Corrections, Washington D.C. 1987. Second Edition published 2003. The NIC methodology has been embraced by jails throughout the United States and has also been adopted by police, fire, transportation, health care and nursing home operations.

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.

### **What a Relief!**

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**

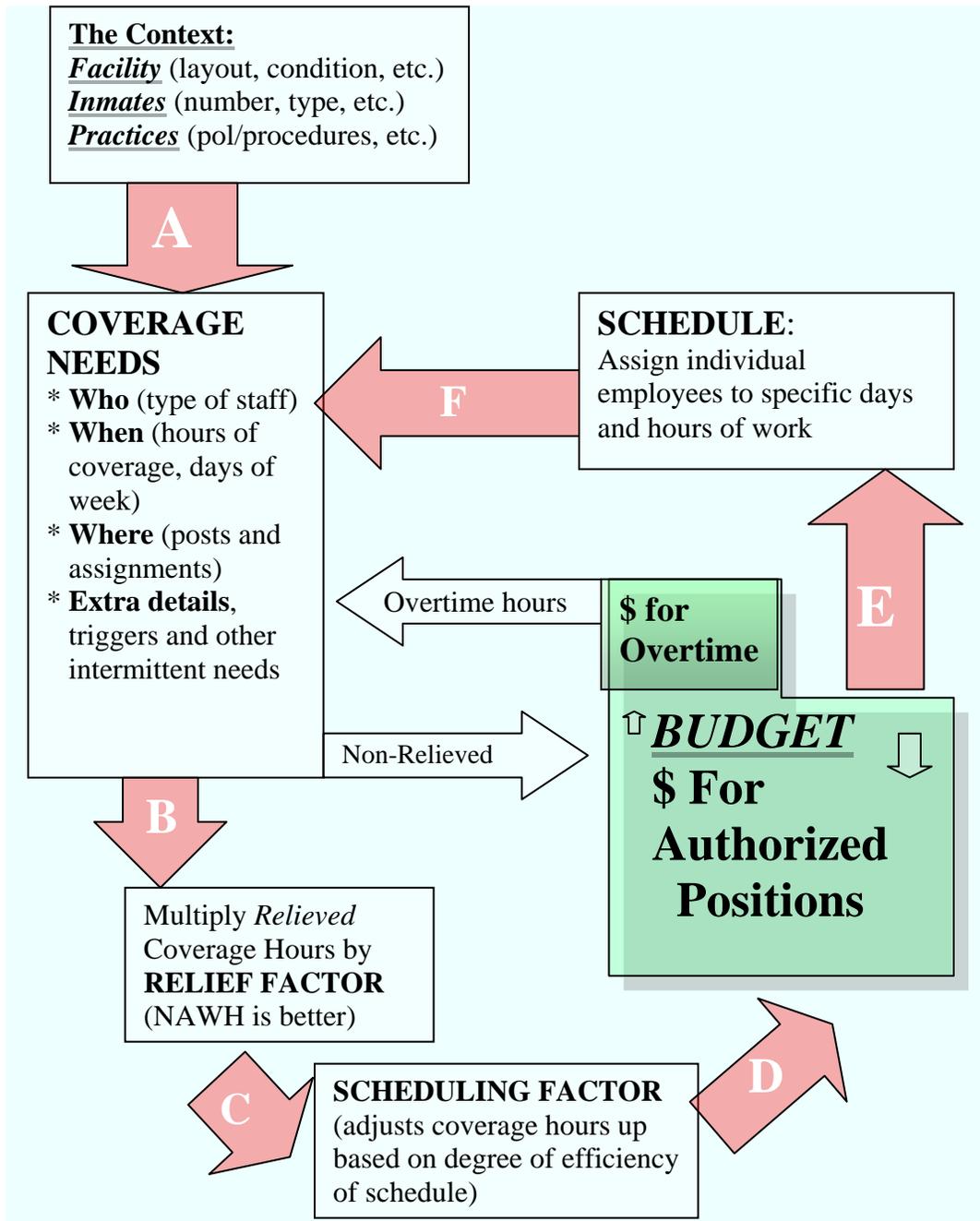
A "relief factor" attempts to answer the question: "How many full-time staff must I have in my budget to provide continuous coverage for a relieved post, using a specific shift configuration (length of shift)?" Relief factors are usually calculated for posts that are operated 24 hours daily, every day 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 is often 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.

**Figure 2: Staffing Analysis Flowchart**

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.

Figure 2 describes the process through which staffing needs are determined, budgets are forged, and staffing resources are eventually deployed. NAWH and RF both address the calculations shown in the arrow labeled B. But the NAWH is also used in other steps in the process, further refining the accuracy of your efforts.

### How do I convert and compare?

To compare NAWH and RF, you must be able to convert one to the other. Figure 3 provides a sample of the results when NAWH is converted to SRF and RF.

**Figure 3: 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 ÷ B)	Number of Shifts in 24 Hours	RF for 24hr coverage
2,920 hours  (8 hours times 365 days)	8 hours	1,550 hours	1.88	3 shifts in 24 hours	5.65
	8	1,600	1.83		5.48
	8	1,650	1.77		5.31
	8	1,700	1.72		5.15
	8	1,750	1.67		5.01
4,380 hours  (12 hours times 365 days)	12 hours	1,550 hours	2.83	2 shifts in 24 hours	5.65
	12	1,600	2.74		5.48
	12	1,650	2.65		5.31
	12	1,700	2.58		5.15
	12	1,750	2.50		5.01

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 simple, as shown in Figure 4.

**Figure 4: Calculating Relief and Shift Relief Factors for 7 Day Posts**

<b>Type of Factor to Be Calculated</b>	<b>Formula</b>
<b>1 shift operated 7 days/week</b>	Annual Coverage Hours ÷ Net Annual Work Hours = “ <i>Shift Relief Factor</i> ” (SRF) for 1 shift
<b>24 hour coverage 7 days/week</b>	SRF for 1 Shift <i>times</i> Number of Shifts in 24 hours = “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:

$$2,086 \text{ annual coverage hours } \textit{divided by} \text{ 1,550 NAWH} = 1.35 \text{ SRF}$$

Still confusing, or just too much trouble? Go to [www.staffinganalysis.com](http://www.staffinganalysis.com) and download a simple Excel file that we have created. It provides several “fill in the blank” forms that will allow you to convert back and forth. As with all of the resources we describe in these articles, they are free.

### **Conclusion**

Take a look at the NAWH methodology. It works, and it works better than previous tools. It is more accurate and more versatile and it improves the accuracy of budget requests.

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The materials identified in this article, along with many other resources, are available at no cost at our on-line staffing analysis clearinghouse: [www.staffinganalysis.com](http://www.staffinganalysis.com).

The clearinghouse is a service provided by CRS, Incorporated, a non-profit organization ([www.correction.org](http://www.correction.org)).

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## ***From Budget to Deployment: Increasing Efficiency by Understanding the Mechanics and Math of Scheduling***

*By Rod Miller and John Wetzel*

*This is the eleventh article on jail staffing analysis, exploring the methodology developed by the National Institute of Corrections (NIC) and presenting enhancements developed since NIC's latest workbook<sup>1</sup> was published. In this article, we provide an overview of the mechanics associated with taking budgeted funds and deploying employees in the jail. We also provide new tools to sharpen scheduling efforts.*

Professional jail employees are essential and expensive. Few jurisdictions have enough tax dollars to add jail employees without careful consideration and analysis, or to use costly employee hours for activities that are not essential.

Jail managers cannot afford to waste the staff hours that are funded, but without measuring the efficiency of scheduling practices, that is precisely what happens. Admittedly, measuring is difficult—unless deliberate efforts are made to capture the right information and data.

In this article we provide an overview of the mechanics and math that take budget dollars and eventually deploy employees in your jail. There are several distinct steps in this process, and just about every step has the potential to “lose” paid hours if we do not understand, measure and manage it.

Figure 1 describes eight steps that take budget dollars and eventually deploy employees in the jail.

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 below.

### **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

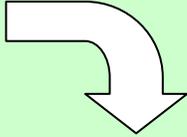
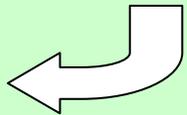
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**2. Employees Are HIRED/RETAINED.**

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

**Figure 1: 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> <p><b>Overtime and/or Part-Time Funds Are Used to Fill Deployment Vacancies</b></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.	
<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>	

### **3. Employees Are ASSIGNED TO TEAMS (Squads/Groups) 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

In our ninth article (March-April 2007) we demonstrated that most schedules are not perfect. Schedules usually assign varying numbers of employees to shifts from day to day, even if the needed level of staffing is fixed.

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.

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. They 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. We will identify new tools and techniques improve such data collection practices later in this series. For now, we assert that 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.

Figure 2 in our ninth article<sup>2</sup> 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

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<sup>2</sup> *Measuring the Efficiency of Schedules*, Miller, Rod and John Wetzel. P. 63 *Sheriff*, March-April 2007. National Sheriffs Association, Alexandria, VA.

- 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. 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.

### **A New Tool to Hone Your Scheduling Skills**

The NAWH calculations that were created earlier in the process once again prove helpful. They may be used to refine the scheduling process. NAWH expresses the “net” hours that an average employee will actually be deployed every year. Using this as a starting point, it is possible to create a:

- “Scheduling discount” that calculates the net number of employees that may be expected to actually report for duty
- “Scheduling premium” that calculates how many employees would be needed on the schedule to net the number of employees sought for a shift

Figure 2 provides examples of scheduling discounts and premiums, and presents the simple formula that is used to create these factors.

**Figure 2: Scheduling Discounts and Premiums**

<b>A</b>	<b>B</b>	<b>A ÷ B</b>	<b>B ÷ A</b>	<b>Example 1</b>	<b>Example 2</b>
<b>Annual Hours Employee is Scheduled</b>	<b>NAWH</b>	<b>Discount</b>	<b>Premium</b>	# of employees who would report for work on an average day, out of 10 names on the schedule	# of employee names needed on the schedule to have 10 employees report for work on an average day
<b>2086</b> 40 hours per week times 52.14 weeks	<b>1,550</b>	0.74	1.35	7.43	13.46
	<b>1,600</b>	0.77	1.30	7.67	13.04
	<b>1,650</b>	0.79	1.26	7.91	12.64
	<b>1,700</b>	0.81	1.23	8.15	12.27
	<b>1,750</b>	0.84	1.19	8.39	11.92
<b>2190</b> 42 hours per week times 52.14 weeks	<b>1,550</b>	0.71	1.41	7.08	14.13
	<b>1,600</b>	0.73	1.37	7.31	13.69
	<b>1,650</b>	0.75	1.33	7.53	13.27
	<b>1,700</b>	0.78	1.29	7.76	12.88
	<b>1,750</b>	0.80	1.25	7.99	12.51

If you use a “relief factor” instead of NAWH, use the information in Figure 3 to make the necessary conversion.

**Figure 3: Example of Net Annual Work Hours (NAWH) Compared to “Shift Relief Factor” (SRF) and “Relief Factor” (RF)**

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
<b>Annual Coverage Hours</b>	<b>Number of hours in a single shift</b>	<b>NAWH</b>	<b>SRF for 1 shift (A ÷ B)</b>	<b>Number of Shifts in 24 Hours</b>	<b>RF for 24hr coverage</b>
<b>2,920 hours</b>  (8 hours times 365 days)	<b>8 hours</b>	1,550 hours	<b>1.88</b>	3 shifts in 24 hours	<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>5.31</b>
	<b>8</b>	1,700	<b>1.72</b>		<b>5.15</b>
	<b>8</b>	1,750	<b>1.67</b>		<b>5.01</b>
<b>4,380 hours</b>  (12 hours times 365 days)	<b>12 hours</b>	1,550 hours	<b>2.83</b>	2 shifts in 24 hours	<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>

Of course, not all days of the week, and not all months of the year, experience the “average” number of employee scheduled and unscheduled absences. Therefore it is

necessary to collect and analyze data about your employees and their habits in order to further refine your scheduling efforts.

More tools and techniques will be provided in the next article, continuing our effort to expand resources for staffing analysis.

The materials identified in this article, along with many other resources, are available at no cost at our on-line staffing analysis clearinghouse: [www.staffinganalysis.com](http://www.staffinganalysis.com). The clearinghouse is a service provided by CRS, Incorporated, a non-profit organization ([www.correction.org](http://www.correction.org)).

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## 12th NSA JAIL STAFFING ANALYSIS ARTICLE

Submitted August 2007, for Publication in September-October 2007 *Sheriff Magazine*

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This is the twelfth article on jail staffing analysis, exploring the methodology developed by the National Institute of Corrections (NIC) and presenting enhancements developed since NIC's latest workbook<sup>1</sup> was published.

In this article, we describe a versatile tool developed by the Orange County (FL) Corrections Department. The Department has offered to share their template with interested agencies.

### **A Scheduling and Staffing Tool That Meets Many Needs: Orange County's "Daily Shift Report"**

*By Rod Miller and John Wetzel*

#### **Data, Data, Data**

In the past two years we have explored many dimensions of jail staffing and staffing analysis. One theme common to all of our articles has been the need for detailed and accurate *data*. Figure 1 identifies some of the data needs associated with the previous eleven articles and their corresponding staffing analysis steps.

Collecting data may seem difficult but it is surprisingly easy when deliberate efforts are made to capture the right information and data. This effort will be rewarded with more effective and efficient staffing practices. You are probably collecting a lot of *information*, but it is difficult to analyze because it is not formatted as *data*. For example, you probably make a record of the various extra assignments (we call them "details") that intermittently demand extra staffing effort, such as emergency transports to the hospital, mass arrests and jury trials that run late. Such information is usually recorded in a log, or on a shift report of some kind. It is rarely recorded in a way that allows it to be used as data for future analysis. We have found that small changes in the way you record information may produce big returns by providing new sources of data that will inform the staffing analysis process. Often, these changes increase the accuracy of your records and even reduce the effort.

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<sup>1</sup> **Staffing Analysis Workbook for Jails**, First Edition. Rod Miller and Dennis Liebert. National Institute of Corrections, Washington D.C. 1987. Second Edition published 2003. The NIC methodology has been embraced by jails throughout the United States and has also been adopted by police, fire, transportation, health care and nursing home operations.

Figure 1: Data Needs Identified in Staffing Analysis Articles

No.	Title	Date	NIC Step	Data Needs
#1	<b>Staffing Analysis-- New Methods Provide More "Relief"</b>	Nov-Dec 2005	Step 2: Net Annual Work Hours	* Employee attendance * Training * Absences
#2	<b>Staffing Analysis-- New Method <i>Accurately</i> Converts Posts to Budgets</b>	Jan-Feb 2006	Step 2: Net Annual Work Hours	* Employee attendance * Training * Absences
#3	<b>Increasing Efficiency of Staff</b>	Mar-April 2006	Step 3: Facility Activity Schedule	* Activities * Daily schedules
#4	<b>Profiling Helps Improve Staffing</b>	May-June 2006	Step 1: Profiling	* Facility * Inmate population * Incidents * Standards compliance
#5	<b>Think Outside the Schedule: Determine Coverage Needs</b>	July-Aug 2006	Step 4: Coverage	* Incidents * Inmate population
#6	<b>Evaluating the Coverage Plan</b>	Sept-Oct 2006	Step 7: Evaluating and Revising	* Standards compliance * Activities * Inmate population
#7	<b>Making Staff Schedules Meet Jail Coverage Needs: Don't Let the Tail Wag the Dog</b>	Nov-Dec 2006	Step 6: Scheduling	* NAWH data * Schedules * Deployment * Extra "details"
#8	<b>The Math of Shift Configuration</b>	Jan-Feb 2007	Step 6: Scheduling	* Schedules * Deployment * Extra "details"
#9	<b>Measuring the Efficiency of Schedules</b>	Mar-April 2007	Step 6: Scheduling	* Schedules * Deployment * Extra "details"
#10	<b>Comparing NAWH and "Relief Factor" Calculations</b>	May-June 2007	Step 2: Net Annual Work Hours	* NAWH data
#11	<b>From Budget to Deployment: Increasing Efficiency By Understanding the Math and Mechanics</b>	July-Aug 2007	Step 6: Scheduling	* Deployment * Unscheduled absence * Scheduled absence * Overtime (vol/man)

## Deployment

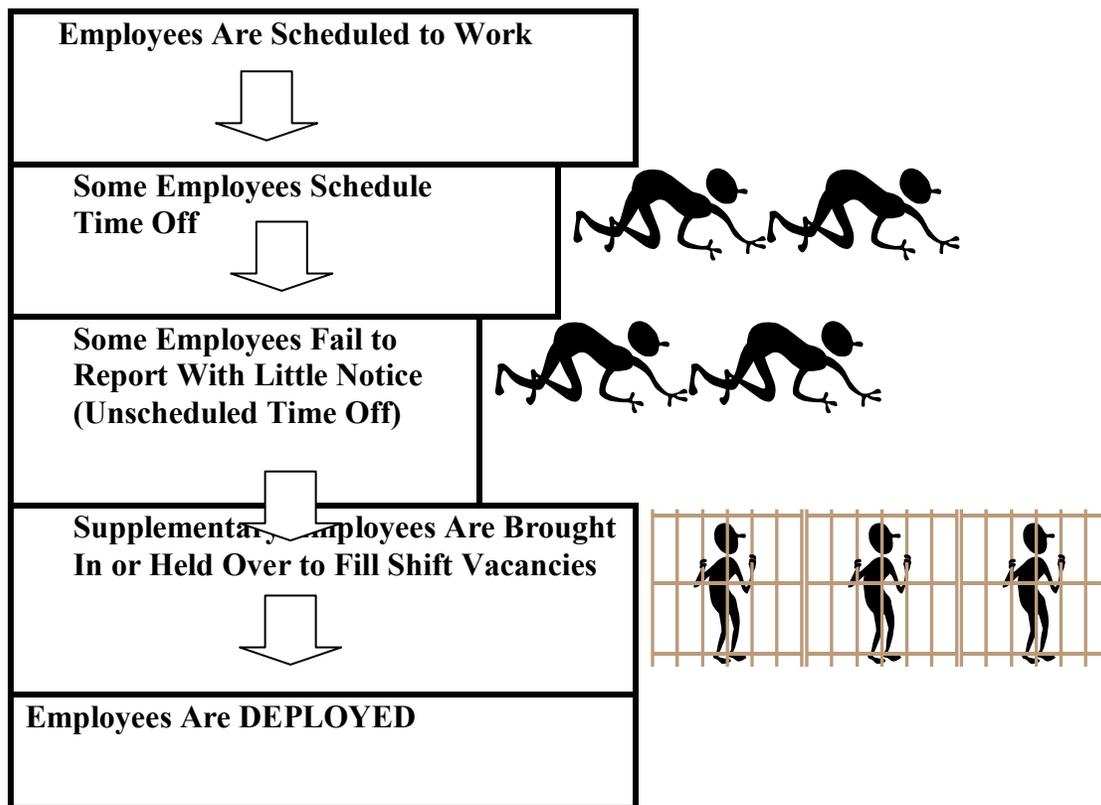
In our last article, we presented a diagram of the eight steps that take budget dollars and eventually deploy employees in the jail (the “deployment process”). Figure 2 focuses in on seven deployment steps, identifying specific data that need to be recorded and collected.

**Figure 2: From Budget to Deployment-- The Major Steps**

Step		Data Needs
2	<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>	<ul style="list-style-type: none"> <li>• <b>Vacancy information</b></li> <li>• <b>Number of days each employee is on the payroll each calendar year</b></li> <li>• <b>Net Annual Work Hours</b></li> <li>• <b>Training data</b></li> </ul>
3	<b>Employees Are ASSIGNED TO TEAMS (Squads/Groups) for the Purpose of Scheduling.</b>	<ul style="list-style-type: none"> <li>• <b>Vacancy rates for each team, including temporary vacancies such as military or FMLA</b></li> </ul>
4	<b>Employees Are SCHEDULED TO WORK Regular Hours On Shifts. Regular Days Off (RDO) Are Determined.</b>	<ul style="list-style-type: none"> <li>• <b>Schedule</b></li> </ul>
5	<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.	<ul style="list-style-type: none"> <li>• <b>Scheduled absences for each employee, by team, by post, by day of the week and other descriptors</b></li> </ul>
6	<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.	<ul style="list-style-type: none"> <li>• <b>Unscheduled absences for each employee, by team, by post, by day of the week and other descriptors</b></li> </ul>
7	<b>The Remaining Employees REPORT AS SCHEDULED for Work and Are DEPLOYED.</b> Sometimes there are shortfalls, sometimes excesses.	<ul style="list-style-type: none"> <li>• <b>Actual attendance data— which employees report, how they are deployed</b></li> </ul>
8	<b>ADDITIONAL EMPLOYEES (part or full-time) ARE CALLED IN (As Needed) to Insure Minimum Staffing Needs Are Met.</b>	<ul style="list-style-type: none"> <li>• <b>Deployment data—employees called in or held over, overtime use, deployment, extra details, other shift facts and figures</b></li> </ul>

“Deployment” is a broad term that we use to describe what *actually* happens in the jail on each shift. Figure 3 depicts the elements that eventually determine deployment. Note the migration of employees from their original scheduled shifts, followed by the enlistment of other employees to fill the gaps.

**Figure 3: From Schedule to Deployment**



Rarely does a jail collect needed detailed information that allows for thorough analysis of deployment practices. Some jails use propriety computer-based systems that assist with scheduling, but which usually do not collect the full range of deployment data that are needed. We have found one agency, however, that has developed its own creative solution.

### **Orange County’s Innovative “Daily Shift Report” (DSR)**

The Orange County Corrections Department (OCCD) houses over 4,200 inmates in several facilities located in Orlando, Florida. Which more than 1,000 officers, scheduling employees and managing daily deployment problems present many challenges. Several years ago, Lt. Mark Underhill developed a scheduling and shift reporting tool using Microsoft Access. The Daily Shift Report (DSR) collects scheduling information, employee absences, overtime figures, and other information that describes the dynamics of each shift, in each facility. Figure 4 displays the organization of the DSR.

**Figure 4: Organization of Daily Shift Report (DSR)**

**Female Detention Center Daily Shift Report**

**Date:** [Date] **Shift:** [Shift] **Location:** [Location]

**Sergeant:** [Name] **Corporal(s):** [Names]

**Control:** [Main Control: Name, Sub Control: Name]

**Housing:** [Dorm A: Name, Dorm B: Name, Dorm C: Name, Dorm D: Name, Dorm E: Name]

**Security:** [Main Security: Name, Quad A Security: Name, Jail P Security: Name, P.A. Security: Name]

**Staff On Shift:** [RO: Name, Training: Name, Vacation: Name, Sick: Name, Date: Name]

**Notes:** [Text area for notes]

**Binding Topics:** [Text area for binding topics]

Thursday, August 23, 2007

Each element of the DSR is described in the following list, confirming the breadth and depth of information and data assembled in this powerful management tool.

## **DETAILED DESCRIPTION OF DSR CONTENTS**

### **A. Date, Shift, Supervisors**

**Name of Facility/Unit**

**Controls** (moves forward and back by date)

**Shift** (A,B,C)

**Supervisors On Duty--**

Lieutenant (s) [Name]

Sergeant (s) [Name]

Corporal(s) [Name]

## **B. Posts and Employees Deployed**

List of all **posts to be filled** for the shift and day of the week (usually divided into functional groupings, e.g. control, housing units, reception, etc.)

**Employee Deployed** in each post (or vacant) [Name of employee]

**Employees Working Overtime** (voluntary, mandatory) [Name of employees]

## **C. Shift Statistics**

**Count** (beginning, gain, loss, end) [Number for each category]

**Discipline** (by category, e.g. criminal charge, major disciplinary, minor, etc.)

**Court Activities** (video, initial appearance, felony arraignment, misdemeanor arraignment, prints) [Number for each category]

**Food Service** [Food temperature]

**Overtime** [Total voluntary] [Total mandatory]

## **D. Staff Off Shift**

**RDO- Regular Days Off** [Names of each employee]

**Training** [Names of each employee]

**Vacation** [Names of each employee]

**Sick** [Names of each employee]

**Other** [Names of each employee]

## **E. Notes and Briefing**

**Notes** [Description of events and activities during shift, identification of all special “details” that required staffing during the shift such as hospital runs]

**Briefing Topics** [Description of topics covered at pre-shift briefing]

A review of the DSRs for one OCCD facility over a 2-week period revealed the following sample entries in Section E “Notes”: GED tests; Employees arriving late; Employees departing early; Employees who traded shifts; Temporary changes in deployment (e.g. Smith covered Unit B 1100 - 1330); Inmates taken to the hospital; Inmates taken to appointments and other activities away from the facility; Shakedown conducted; Hepatitis testing; Special details that required personnel; Fire inspections conducted; Medical incidents; Descriptions of disciplinary incidents; Dorm locked down early due to misconduct during court; Protective custody requests; Recreation canceled due to staffing shortage; Equipment problems; Facility repair needs; Contraband discovered (e.g. “knife found in rec yard”); Fights between inmates; Video visitation broke down; No hot water; Recreation canceled due to rain; Psych referrals; ; Lightning strike; Times of supervisory tours; Late shift relief and tardiness due to accident on interstate. These entries provide many insights into the actual operation of each shift, but are typed in as narrative and are therefore difficult to analyze after the fact.

### **A Dynamic Tool**

The DSR automatically posts the names of every employee scheduled to work on each shift, along with the names of employees who have regular days off (RDO). This is drawn from a master schedule that is entered into the DSR in a single spreadsheet. A complete employee roster is also part of the DSR database, which allows substitutions of employees to be drawn from a drop-down menu, rather than entered by hand. The DSR database also has employee call lists and employee seniority lists.

After the employees are initially posted on each shift, a series of changes are made in the DSR reflecting schedule time off, vacancies, and other subtractions from the shift, prior to its implementation. These changes are identified and posted right up to the time the shift starts. Often, additional absences are noted at roll call, and these are also posted on the DSR.

The DSR is updated throughout the shift to identify employees who were brought in to fill vacancies, overtime used, special details that required additional personnel, and many other facets of the shift operation. These changes are posted throughout the shift and only stop when the shift ends. At that point, the DSR becomes a record, rather than an operational tool.

### **A Wealth of Data and Information**

Because all of the information recorded on the DSR is part of an Access database, it is readily available for subsequent analysis. In this way, the DSR is much more than a static record that describes a shift after the fact. The database may be mined in many ways to produce statistics such as:

- Posts chronically not filled due to staff shortages
- Extent of mandatory overtime used, by facility, unit, day of the week and shift
- Absence patterns according to facility, unit, day of the week and shift
- Trends in scheduled and unscheduled absences
- And more...

Most of the information recorded on the DSR is in a format that facilitates analysis. However, some of the narrative entries are text entries that are more difficult to mine later. A recent comprehensive staffing report recommended conversion of many of the DSR narrative elements into data-friendly formats, and the addition of several new elements.

### **Available At No Cost!**

OCCD is willing to share the DRS program with interested agencies. You will need to have someone on staff who is skilled with Microsoft Access, but if you don't, someone is likely available in the community, often at no cost. And if all else fails, you may fall back on the assistance of an 8-year-old.

OCCD has a long history of collaboration with other agencies and sharing of resources to improve the field. In that spirit, the DSR program is available to all interested agencies. To secure a copy of the DSR program, send an email to:

Don Bjoring  
Manager of Professional Services  
Orange County Corrections Department  
Office: (407) 836-3570  
[Don.Bjoring@ocfl.net](mailto:Don.Bjoring@ocfl.net)

The materials identified in this article, along with many other resources, are available at no cost at our on-line staffing analysis clearinghouse: [www.staffinganalysis.com](http://www.staffinganalysis.com). The clearinghouse is a service provided by CRS, Incorporated, a non-profit organization ([www.correction.org](http://www.correction.org)).

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*Rod Miller has headed CRS Inc. since he founded the non-profit organization in 1972. He is the author and co-author of numerous texts and articles on various aspects of jail planning, design, and operations. For more information, contact him at [rod@correction.org](mailto:rod@correction.org), 925 Johnson Drive, Gettysburg, PA 17325, or (717) 338-9100.*

*John Wetzel is the warden of Franklin County Jail in Chambersburg, PA. For more information, contact him at [jewetzel@co.franklin.pa.us](mailto:jewetzel@co.franklin.pa.us), or 1804 Opportunity Avenue, Chambersburg, PA 17201, or (717) 264-9513.*

For more than two years, *Sheriff Magazine* has presented jail staffing analysis articles in every issue. The articles have expanded on the National Institute of Corrections (NIC) staffing analysis workbooks.<sup>1</sup>



**Sheriff**  
MAGAZINE

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# Diagnosing Overtime Using the NIC Staffing Analysis Methodology and Tools

*By John Wetzel, Warden  
Franklin County Jail, Chambersburg, PA*

## Using Staffing Analysis Tools in Franklin County

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 article 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

<sup>1</sup> Miller, Rod and Dennis Liebert. *Staffing Analysis Workbook for Jails, First and Second Editions*. U.S. Department of Justice, National Institute of Corrections. 1987 and 2003.

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.

*Memo to County Commissioner*

**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. See the following chart.

**Hours Needed**

Our minimum staffing levels, which 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

We also asked our correctional officer union 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.

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 shakedown, 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” of sorts that creates elevated levels of overtime.

COVERAGE NEEDS	REGULAR HOURS	SHORTFALL
	Time Off: RDO, Sick Leave, Vacation, FML, etc. (calculated in the NAWH worksheet)	
Hours Needed for Minimum Coverage	Training	Hours to be made up with overtime.
	Vacancies	
	Regular Hours Available	

*Time Off.* The first category of concern are 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:
- 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, has 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 8 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 will 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, given 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 considers 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

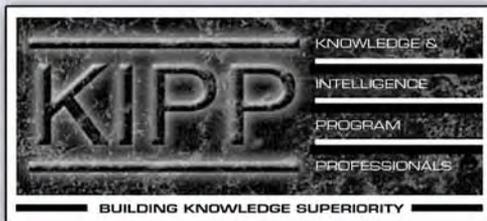
are paid for at straight time, as opposed to overtime. It will, in effect, substantially reduce the total number of vacancy days next year and produce a corresponding reduction on overtime.

### 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 8 temporary positions is a lot, but remember that they are already budgeted because our staffing analysis methodology helps us to budget for annual hours, not positions....

The NIC workbooks and other resources are available without cost at [www.staffinganalysis.com](http://www.staffinganalysis.com), along with emerging tools being developed with NIC funding.

John Wetzel is the warden of Franklin County Jail in Chambersburg, PA. For more information, contact him at [jewetzel@co.franklin.pa.us](mailto:jewetzel@co.franklin.pa.us), or 1804 Opportunity Avenue, Chambersburg, PA 17201, or (717) 264-9513.



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This is the fourteenth article in a series on jail staffing analysis, exploring the methodology developed by the National Institute of Corrections and presenting enhancements developed since NIC's latest workbook<sup>1</sup> was published.



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# Increasing Staff Efficiency by Managing Inmate Behavior

By Rod Miller, founder CRS

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>2</sup>

This article draws on the experiences of Montgomery County, Maryland, during transition planning for their new correctional facility several years ago. It also updates elements of an article published in *American Jails* in May 2001.

## 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 article 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

<sup>1</sup> **Staffing Analysis Workbook for Jails**, First Edition. Rod Miller and Dennis Liebert. National Institute of Corrections, Washington D.C. 1987. Second Edition published 2003. The NIC methodology has been embraced by jails throughout the United States and has also been adopted by police, fire, transportation, health care and nursing home operations.

<sup>2</sup> Contact NIC at [www.correction.org](http://www.correction.org) to learn more about Inmate Behavior Management and other programs and resources.

### 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

A quick three-step process can identify inconsistencies and opportunities:

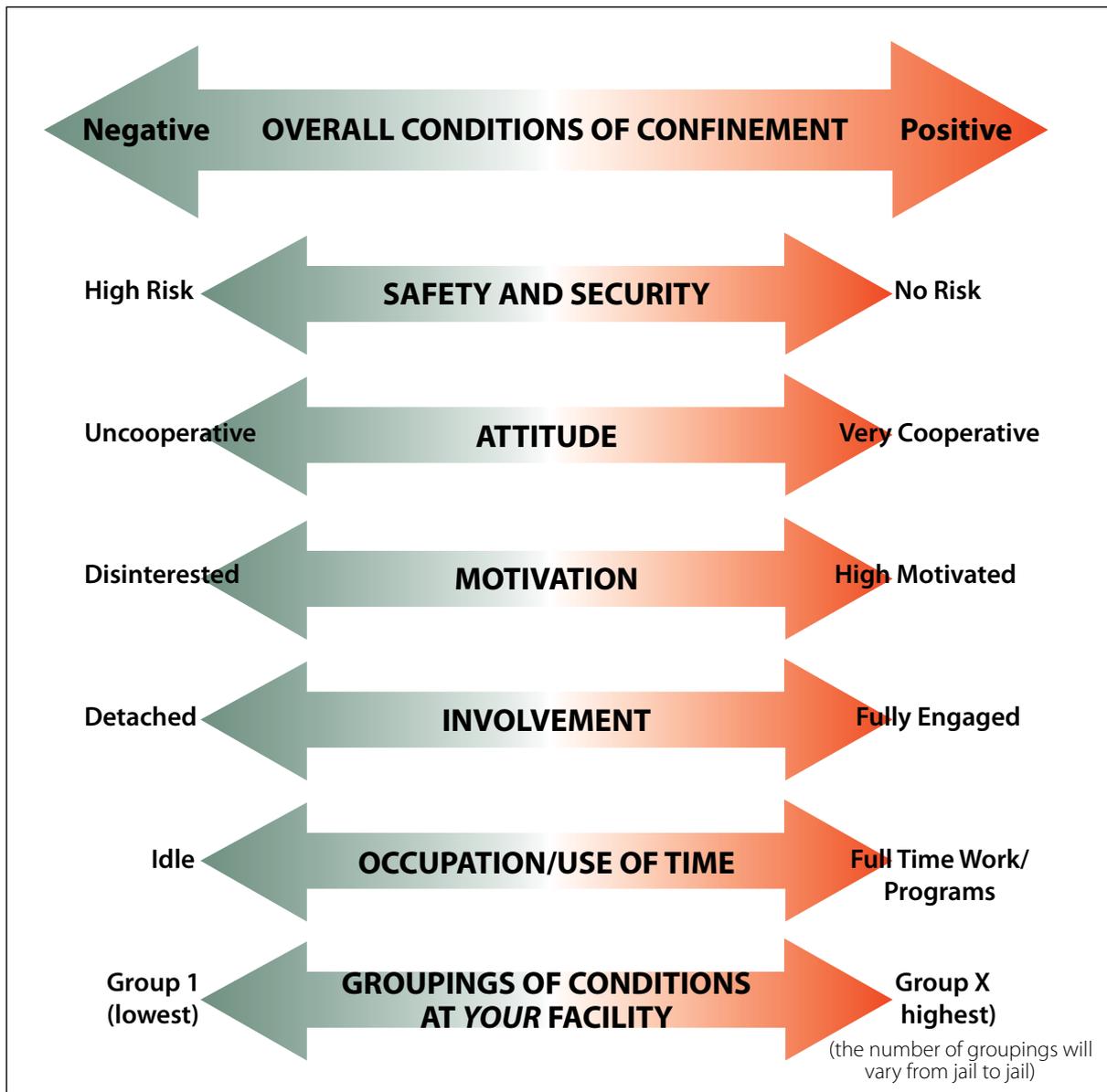
1. Classify various types of inmates and housing units into distinct categories that should have similar conditions of confinement
2. Select the specific conditions of confinement elements that you want to use to promote improved inmate behavior
3. Assign variations of each selected element to each grouping 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 1. This may help to identify some of the key attributes that will distinguish one group of inmates from another. Add additional considerations to those identi-



**Table 1: Conditions of Confinement Continuum**

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 2: Sample of Groupings**

fied in Table 1 based on your own policies and practices.

Table 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 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 3 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 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 4 (see page 66), 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

**Table 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
<b>Daily Schedule/Security</b>	Inmate control of cell access during day
	Lights Out
	Lock-Ins (times locked into cell for counts, etc.)
<b>Visiting</b>	Out-of-Cell Time
	Frequency of visits
	Length of Visits
<b>Exercise</b>	Type of Visiting (e.g. non-contact, contact)
	Frequency (of access)
	Length (of access)
	Activities Available
<b>Recreation</b>	Equipment Available
	Access to recreational materials
<b>Telephone</b>	Frequency of access
	Access (hours, length of calls, number of phones)
<b>Food</b>	Type of Calls Permitted
	Quality/Selection (e.g. Nutra-Loaf)
	Snacks/Juice Bar
<b>Activity</b>	Dining conditions (cell/dayroom/dining room)
	Work options and desirability of jobs
	Library access
	Computer access (in housing units)
	Location of activities (hsg unit, pod, central)
<b>Entertainment</b>	Opportunities for co-ed activities
	Hours TV is Available
	TV Content Allowed (e.g. educational, broadcast, cable)
	Equipment (number of sets, type of sets)
<b>Television</b>	Availability of Movies/Videos
	Content Allowed (e.g. PG, PG-13, R)
<b>Movies</b>	Access to Concerts/Performances/Special Events
<b>Special Events</b>	
<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</b>	
<b>(use your imagination...)</b>	

**Table 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.
Telephone	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
Entertainment	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

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 them. Don't forget to ask reviewers to offer their comments about the groupings and possible additional elements to consider.

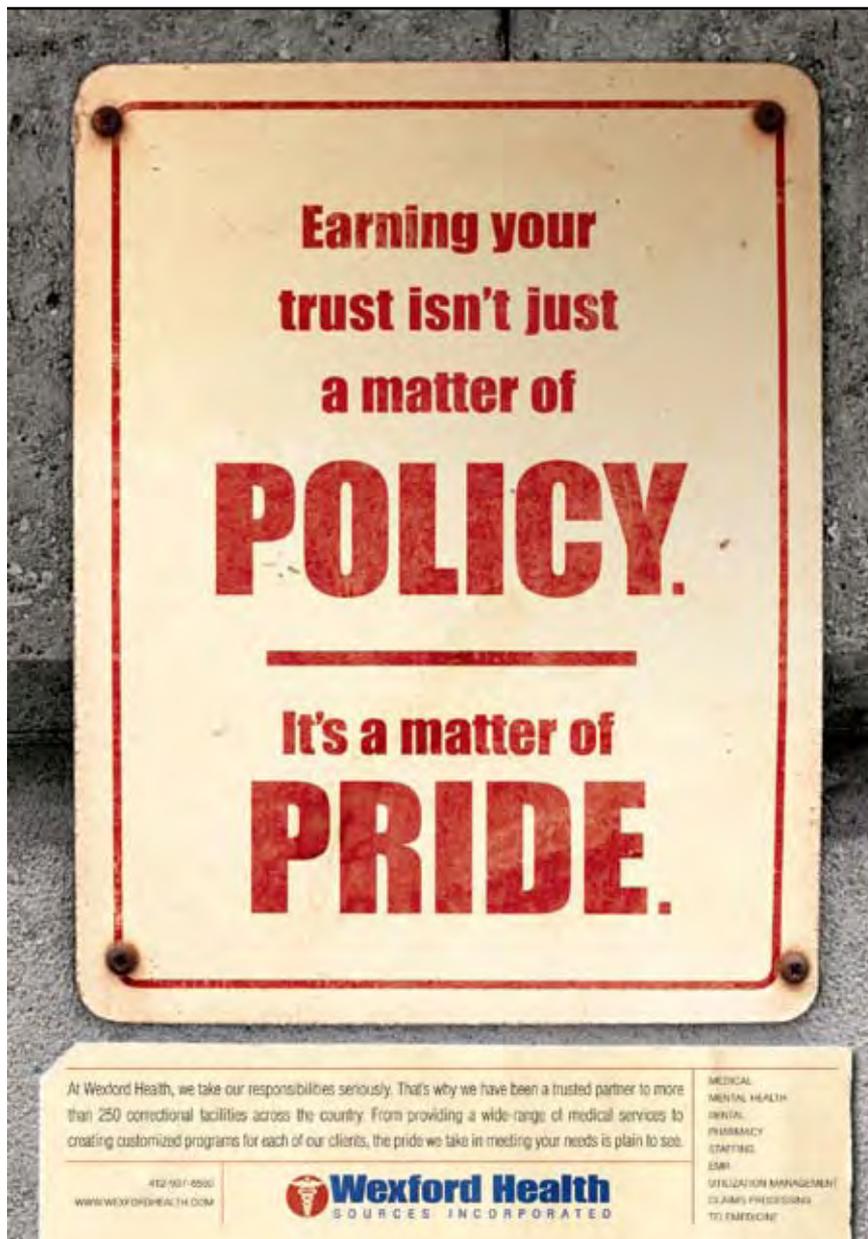
After you have secured a thorough review of the draft, make revisions and start the implementation process. Make periodic reviews and revisions. Consider this to be a work in progress that should be improved with experience.

The results—inmates who behave the way you want them to behave-- will be realized soon.

The materials identified in this article, along with many other resources, are available at no cost at our on-line staffing analysis clearinghouse: [www.staffing-analysis.com](http://www.staffing-analysis.com). The clearinghouse is a service provided by CRS, Incorporated, a non-profit organization ([www.correction.org](http://www.correction.org)).

The National Institute of Corrections (NIC) offers training and other resources that address inmate behavior management, and many other aspects of jail operations. Contact NIC through their web site: [www.nicic.org](http://www.nicic.org). ★

Rod Miller has headed CRS Inc. since he founded the non-profit organization in 1972. He is the author and co-author of numerous texts and articles on various aspects of jail planning, design, and operations. For more information, contact him at [rod@correction.org](mailto:rod@correction.org), 925 Johnson Drive, Gettysburg, PA 17325, and (717) 338-9100.



## Courts View Staffing Levels and Practices as Central to the Constitutional Duty to Protect

In our previous 14 articles, we examined many elements of the staffing analysis process. This article, and its successor in the next issue, steps back a bit and looks at the external factors that guide and influence jail operations. Here we look at the guidance provided by federal courts. In our next article we will explore local, state, and national standards.

# Jail Staffing and The Federal Courts

*By Rod Miller, founder CRS and John Wetzel*

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 article, 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.

The U.S. Constitution imposes an extraordinary duty to protect on jails that has no counterpart in the public safety arena.<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 is delivered are discretionary decisions, from a constitutional perspective. To be sure, it is politically expedient to 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. Caselaw 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).

<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.

<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.

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 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.”

<sup>3</sup> *Ramos v. Lamm*, 639 F.2d 559 (10<sup>th</sup> Cir. 1980).

**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.*

## Conclusion

Operating a jail is a tremendous responsibility. Courts continue to define our responsibilities in light of constitutional requirements. Proactive jail managers are both informed by evolving caselaw, and endeavor to ensure that all aspects of their operation are in compliance. Responsible elected officials respect their constitutional duty to protect jail inmates and find ways to fund jail staffing and operations.

The National Institute of Corrections has provided funds to a non-profit organization to revise the NIC Staffing

Analysis Workbook for Jails and to expand the tools and resources available to practitioners. For more information about jail staffing and staffing analysis, go to [www.staffing-analysis.com](http://www.staffing-analysis.com), or contact [rod@correction.org](mailto:rod@correction.org). ☛

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## 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 (8th 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 (7th 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.

**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.

**Triestman v. Federal Bureau of Prisons**, 470 F.3d 471 (2nd Cir. 2006). Because of the language of a policy and procedure, prison officials must provide “continuous staff coverage” to, and may not leave “unattended,” any inmate in a locked housing unit who does not have access to an emergency “signaling device.”

**Wilson v. Maricopa County**, 484 F.Supp.2d 1015 (D.Ariz. 2006). The law was clearly established in July 2003 that the sheriff’s alleged conduct of housing inmates in tents without adequate staffing, while being deliberately indifferent to the danger of inmate-on-inmate assaults, would violate the Eighth Amendment. State court case affirmed a jury verdict against the sheriff and held that the lack of supervision and security measures at Tent City supported the jury’s finding of deliberate indifference.

<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).

The previous article explored the influence of court decisions on jail staffing practices. This article examines state and professional standards, another major influence on staffing needs and practices.

## Standards and Jail Staffing

*By Rod Miller, founder CRS*

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 standards go further than courts in many instances.

### 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>

<sup>1</sup> *Detention and Corrections Caselaw Catalog 19th Edition*. Rod Miller and Donald Walter. CRS Inc. Gettysburg PA. 2007. This case summary, and those that follow in this article are reprinted with permission.

*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)

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 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 confusion about which comes first: court decisions or standards. Understanding the evolution 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 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 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

<sup>2</sup> *Performance-Based Standards for Adult Local Detention Facilities, 4<sup>th</sup> Edition*. American Correctional Association. Alexandria VA. Revised 2006.

<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

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6 out of 10 people with Alzheimer's will wander, and if not found within 24 hours, up to 50% risk serious injury or death.<sup>2</sup>  
The National Crime Information Center (NCIC) tallied 50,930 active missing adult and seniors cases in the US as of January 31, 2007.

<sup>1</sup>National Center for Missing & Exploited Children  
<sup>2</sup> Alzheimer's Association

**SafeAssured ID** - A high-tech tool that gives law enforcement instant access to **important** identifying information and other **powerful** features to aid in the search of a missing person.

***"The information contained on SafeAssured's mini-CD can be disseminated quickly to get the information out to the news media. The ability to act immediately with SafeAssured ID is a great benefit."***

- Jerry Pagel, Calumet County Sheriff

**SafeAssured ID** is the most comprehensive family safety program of its kind. SafeAssured ID was designed to complement the efforts of a qualified or non-qualified AMBER Alert situation. SafeAssured ID provides media and law enforcement with instant, holistic, and ready to broadcast information unique to a missing person. SafeAssured ID provides peace of mind to families, while protecting their privacy with encrypted files.

## Every SafeAssured ID kit contains:

- Up to ten digital fingerprints
- Digital photograph
- Streaming video showing mannerisms and gait
- Voice track providing the person's voice inflection and accent
- Individuals physical description
- Vital personal information (street address, date of birth, life-threatening medical conditions, identifying scars or marks, and tattoos)
- Secret family code word



Along with the SafeAssured mini CD, all kits come with a durable, full-color photo ID card, and a "Guidebook for Parents" which contains important safety information, written in conjunction with the National Center for Missing & Exploited Children (NCMEC). The valuable information on the mini-CD can be used to create missing person posters, as well as shared with law enforcement within minutes of the disappearance. Should a person go missing, this information can aid law enforcement and the community in an individual's speedy recovery.

***"It's a good resource not only for investigators, but to area residents if it goes out to the media,"***

- Lt. Dan Klatt of the Racine County Sheriff's Department

SafeAssured IDs differ from other ID kit programs by utilizing new technology and innovative, time-saving features. The kits are typically produced for families at highly visible public events such as health and safety fairs, schools, etc. The program is easy-to-use, and simple to implement in your communities. Partnering with civic organizations, businesses, and others makes it even easier. Local, state and federal grants may also be available. For further details go to [www.safeassured-id.com/turnkey](http://www.safeassured-id.com/turnkey).

**Maintain a Positive Public Image and Make a Major Impact**

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. Members of the working group were:

- Sandra Bedea-Mueller, Ocean County Department of Corrections, New Jersey
- Mark Fitzgibbons, Beaufort County Department of Corrections, South Carolina
- Jerry Frey, Hampden County Sheriff's Department, Massachusetts
- Steve Ingley, American Jail Association
- Owen Quarnberg, Utah Sheriffs' Association
- David Parrish, Hillsborough County Sheriff's Department, Florida
- Tom Rosazza, Colorado Springs, Colorado
- Blake Taylor, South Carolina Department of Corrections
- Hal Wilbur, Broward County Department of Corrections, Florida

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. Participants were selected by NSA and AJA. The team produced a draft that was approved for field testing by the ACA Standards Committee in August 2007. The team was comprised of the following members:

- David Parrish (Team Leader)
- Sheriff John Bittick
- Sheriff David Goad
- Robert Hall
- Margo Hurse
- Sheriff Ted Kamatchus
- Rod Miller
- Mike Pinson
- Sheriff Everette Van Hoesen

ACA executive staff members Jim Gondles, Mark Flowers and Jef Washington worked with the team throughout the development process.

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...

<sup>4</sup> Contact Mark Flowers at [markf@aca.org](mailto:markf@aca.org) or 703-224-0070.

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.

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.

The next installment in this series will further explore emerging standards, the relationship between standards and courts, and the impact on jail staffing practices. ✪

Rod Miller has headed CRS Inc. since he founded the non-profit organization in 1972. He is the author and co-author of numerous texts and articles on various aspects of jail planning, design, and operations. For more information, contact him at [rod@correction.org](mailto:rod@correction.org), 925 Johnson Drive, Gettysburg, PA 17325, or (717) 338-9100.



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Rod Miller

### Using Standards to Improve Jail Staffing

The previous article in the jail staffing analysis series identified various types of standards that are used to measure jail sufficiency and performance. This article presents excerpts from the newest form of jail standards, the “core” standards that are currently being field tested by the American Correctional Association (ACA).

Unlike all other ACA standards that describe a higher “professional” level of standards and practices, the new core jail standards provide the first-ever attempt to establish national *minimum* standards. According to ACA:

“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 core jail standards incorporate elements of ACA’s new performance-based standards format: a performance standard describes the conditions to be achieved, followed by a series of “expected practices” that identify activities to be implemented and conditions to be maintained.

### Excerpts from Field Test Draft, Core Standards for Jails

The following excerpts from the field test draft are provided to 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.

#### Core Jail Standard/Expected Practice

#### Staffing implications

#### PERFORMANCE STANDARD

**1A. The community, staff, contractors, volunteers, and inmates are protected from injury and illness caused by the physical environment.**

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.

## **PERFORMANCE STANDARD**

**1C. The number and severity of emergencies are minimized. When emergencies occur, the response minimizes the severity.**

### **Expected Practices**

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.

## **2. SECURITY**

***GOAL: Protect the community, staff, contractors, volunteers, and inmates from harm.***

## **PERFORMANCE STANDARD**

**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.**

The facility's security, life safety, and communications systems are monitored continuously from a secure location. 4-ALDF-2A-01

One or more staff member 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

Staffing practices must combine to maintain safety and security at all times.

with the standards. 4-ALDF-2A-14

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.

### **PERFORMANCE STANDARD**

#### **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.**

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)

Staff members must be available to provide continuous observation until assessment, and frequent observation after the assessment.

### **PERFORMANCE STANDARD**

#### **2C. Contraband is minimized. It is detected when present in the facility.**

Procedures guide searches of facilities and inmates to control contraband and provide for its disposition. 4-ALDF-2C-01

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

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

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

### **PERFORMANCE STANDARD**

#### **2D. Improper access to and use of keys, tools and utensils are minimized.**

The use of keys is controlled. 4-ALDF-2D-01 (MANDATORY)

Controlling access and use of keys, tools and utensils requires close staff supervision.

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)

### **3. ORDER**

***GOAL: Maintain an orderly environment with clear expectations of behavior and systems of accountability.***

**PERFORMANCE STANDARD****3A. Inmates comply with rules and regulations.**

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.

**4. CARE**

***GOAL: Provide for the basic needs and personal care of inmates.***

**PERFORMANCE STANDARD****4A. Food service provides a nutritionally balanced diet. Food service operations are hygienic and sanitary.**

Meals are prepared, delivered, and served under staff supervision. 4-ALDF-4A-17

Staffing practices must provide supervision of food preparation, delivery and serving.

**PERFORMANCE STANDARD****4D. Health services are provided in a professionally acceptable manner. Staff are qualified, adequately trained, and demonstrate competency in their assigned duties.**

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)

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

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

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

Only a medical or mental health professional may authorize the use of restraints for medical or psychiatric purposes. 4-ALDF-4D-21 (MANDATORY)

An investigation is conducted and documented whenever a sexual assault or threat is reported. 4-ALDF-4D-22-2

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

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)

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

A health record file is maintained for all inmates containing information specified by the health authority. 4-ALDF-4D-26

## **5. PROGRAM AND ACTIVITY**

***GOAL: Help inmates to successfully return to the community and reduce the negative effects of confinement.***

### **PERFORMANCE STANDARD**

**5A. Inmates have opportunities to improve themselves while confined.**

Inmate programs, services and counseling are available, consistent with community standards and resources. 4-ALDF-5A-01

### **PERFORMANCE STANDARD**

**5C. The negative impact of confinement is reduced.**

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.

## **6. JUSTICE**

***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.***

**PERFORMANCE STANDARD****6B. Inmates are treated fairly.**

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.

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

**PERFORMANCE STANDARD****7B. Staff, contractors, and volunteers demonstrate competency in their assigned duties.**

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)

Net annual work hour calculations must accurately predict staff time required to accomplish training at the beginning of each budget cycle.

Both of ACA's jail standards manuals are referenced in the National Institute of Corrections' *Third Edition Staffing Analysis Workbook for Jails*. A draft of the *Third Edition* is available for review and field testing by contacting [rod@correction.org](mailto:rod@correction.org).

For more information about ACA standards go to the organization's web site, [www.aca.org](http://www.aca.org), or contact Mark Flowers, Director of Standards and Accreditation at [markf@aca.org](mailto:markf@aca.org) or 703-224-0070.

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Rod Miller and John Wetzel

## Improving Safety and Security Using New “Jail Vulnerability Assessment” Tools

### INTRODUCTION

This article continues NSA’s focus on jail staffing, using the National Institute of Corrections(NIC) staffing analysis methodologies as a foundation.<sup>1</sup> NIC is in the process of finalizing the third edition of its *Staffing Analysis Workbook for Jails*.

Another new NIC project provides new insights for several steps of the staffing analysis process. The “jail vulnerability assessment” process builds on the earlier *Correctional Vulnerability Assessment (CVA)* resources that were developed by the American Correctional Association (ACA) with funding from the National Institute of Justice (NIJ) over the past ten years. This article draws from the draft handbook that is being developed for NIC through a cooperative agreement.

The emerging NIC approach for jails balances the depth of analysis that is provided by the CVA process with the breadth of scope and participation that is needed in the jail setting. It is based on several principles that have proven effective in the jail setting:

1. Participation. Engaging many stakeholders in the process improves the outcomes and provides secondary benefits.
2. Varied perspectives. Involving varied participants provides needed perspectives. Every participant will see different angles and pose unique questions.
3. Finding expertise at all levels. Every stakeholder, from line staff to administrators, brings experience and perspectives that are essential to the success of the process.
4. Continuous. Maintaining safety and security is a continuous process. The chain of safety and security is only as strong as its weakest link.

The jail vulnerability assessment process and its associated resources have the primary goals of:

- Improving jail safety and security
- Promoting the development and implementation of *continuous* safety and security improvement practices

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<sup>1</sup> Miller, Rod, Dennis Liebert and John Wetzel. *NIC Jail Staffing Analysis Workbook, First Edition, Second Edition and Third Edition (under development)*. 1987 - 2009. National Institute of Corrections, Washington D.C. [www.nicic.org](http://www.nicic.org)

Properly implemented, the JVA process will provide ongoing opportunities to identify risks and to find the best responses.

### **Safety and Security Principles**

*Safety and security are the foundation on which all jail operations must be built.*

Without effective, continuous safety and security practices, everyone is exposed to a variety of risks. Programs and services are often part of a jail's mission, but these must be built on a strong foundation.

*Security is not convenient.*

Implementing security practices requires time and attention and usually slows the pace of operations. Employees often suspend basic security practices in order to accommodate what they perceive to be the needs of jail stakeholders. This might take the form of propping a secure movement door open or failing to positively identify someone before allowing access to an area. Such well-intentioned actions seriously undermine facility safety and security.

*Achieving safety and security requires balancing facilities, technology, and operations.*

All three jail components must be sufficient and balanced in order to achieve and maintain safety and security. This document explores all three dimensions and provides tools to help assess and improve each one, and all three together.

*Proper staffing is essential.*

Maintaining safety and security demands sufficient staff who are:

- Qualified
- Directed by policies and procedures
- Properly trained
- Effectively supervised
- Properly deployed (at the right place, at the right time)

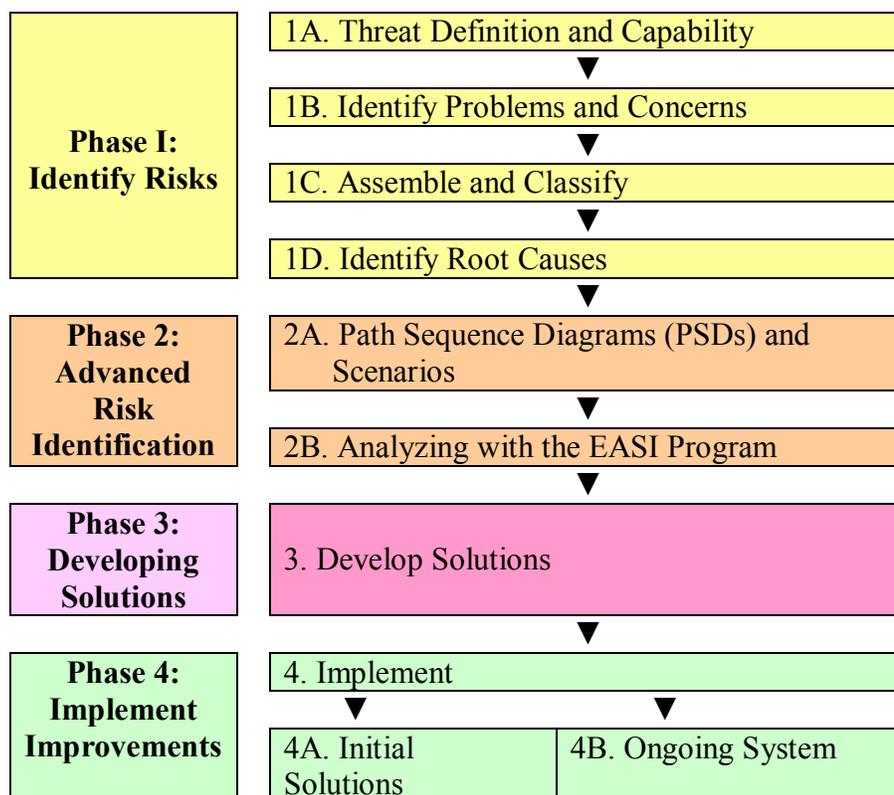
### **The Jail Vulnerability Assessment (JVA) Process**

The JVA process is comprised of four phases of activity. The first three phases examine every facet of the jail setting, identifying problems and concerns, corresponding causes, and solutions. The fourth and final phase sets the stage for ongoing, continuous activities.

Figure 1 presents the four phases and the steps associated with each. The process is comprised of a series of *consecutive* steps, each building on the preceding. To realize the

most value from the process, all steps should be completed in order. However, individual phases or even steps may prove useful to address specific issues or problems, if it is not feasible to implement the entire process.

**Figure 1: Jail Vulnerability Assessment Process**



Each phase of work is described briefly in the following narrative.

### Phase One: Identify Risks

#### 1A. Threat Definition and Capabilities

A clear understanding and prioritization of threats is the starting point for the process. For example, if escape is not an issue, as might be the case in a community-based reentry center, many of the physical, technical, or operational features will not be of concern. A specific type of security door or lock might present a risk if escapes are defined as a primary threat, while these features would not present risks in a setting in which escape is not a concern. Figure 2 depicts a simple decision tree.

Determining the *capabilities* of threats is also a requisite for determining if facilities, technology or operations pose a risk. For example, in many jails the small windows in inmate cells represent the exterior security perimeter—if this facility feature is compromised, there is nothing between the inmate and the outside world. If “introduction

of contraband” is defined as a priority threat, then an inmate’s ability to compromise the window is of great concern. Whether or not the window is vulnerable will be affected by the inmate’s (threat’s) capabilities. If the inmate has assistance form the outside, the risk of window penetration is heightened. If the inmate has access to certain tools, or materials that may be used as tools, the risk is also higher. In this manner, threat capabilities help determine the level of risk.

**Figure 2: Defining Risks Based on Threats**



#### 1B. Identify Problems and Concerns

During this phase, all facets of the facility, technology and operations are compared to threats and threat capabilities. Through a series of targeted activities, and using several analytical tools, the jail will be viewed from a variety of perspectives. This step casts a wide net to identify the full range of problems and concerns, involving many stakeholders in varied roles. This is not a security audit or inventory; rather it assesses features in the context of the specified threats. Instead of describing the characteristics of a door lock, the lock is evaluated in terms of threats and threat capabilities.

#### 1C. Assemble Problems and Concerns and Classify

The preceding step identified dozens of problems and concerns, many of which are freestanding and not seemingly connected to others. In this step, findings are sorted and classified according to their characteristics: physical, technical, or operational.

#### 1D. Identify Root Causes

After the initial findings have been re-sorted according to their characteristics the root causes are identified. The findings are usually symptoms of underlying problems. This step of the process examines what creates the problems. For example, one of the findings

might be that “booking officers are not following procedures regarding security of inmates during initial processing.” Failing to consistently follow procedures could be considered a symptom, caused by a lack of effective officer supervision (first line supervision). After the root causes are identified, the findings are once again sorted.

### Phase Two: Advanced Risk Identification

This phase of the process uses powerful new techniques and tools to dig deeper into risks and vulnerabilities and, in some instances, to actually *calculate* the probability of specific actions’ success. The foundation for this work is found in the Correctional Vulnerability Assessment (CVA) materials, but in the CVA process these tasks are the centerpiece, rather than a secondary tool. Where the CVA process ends up focusing on only a few pathways that are subsequently analyzed using these tools, the JVA process ensures that the full range of problems and concerns are identified before applying advanced analysis.

#### 2A. Develop Path Sequence Diagrams and Scenarios

This step identifies opportunities for threats to piece together a series of steps in order to exploit weaknesses in the facility, technology, and operations. Path sequence diagrams are graphic representations of facility features and set the stage for collecting data about detection, delay and response. Several scenarios are developed and data is applied at each step as a prelude to analysis using a computer program.

#### 2B. Analyze with the EASI Programs

The scenarios developed in the preceding step are entered into an Excel-based program. Estimate of Adversarial Sequence Interruption (EASI) uses sophisticated formulas to actually calculate the probability of a threat’s success. Better yet, the EASI program calculates the impact of potential solutions, modeling the value of the changes to ensure that the most effective actions are selected.

### Phase Three: Develop Solutions

The findings from Phase One and Phase Two are combined at this point in the process. Root causes are analyzed, leading to the identification of specific solutions, or, more accurately, “solution sets” that will reduce risk.

### Phase Four: Implement Improvements

The solutions are implemented in this final phase.

#### 4A. Implement Initial Solutions

Many specific issues will be identified the first time a JVA is conducted. Most of these will be addressed in the implementation phase, correcting the underlying causes. It is not unusual for a wide spectrum of improvements to be implemented at this point.

#### 4B. Implement an Ongoing System

Maintaining a safe and secure jail requires continuous efforts. Changes in facilities, technology, and operations must be identified and appropriate responses must be implemented. In this, the final step in the JVA process, an ongoing system that provides “continuous safety and security improvement” is created and implemented.

In our next article we will explore the uses of the JVA process to improve jail staffing practices.

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*Rod Miller has headed CRS Inc. since he founded the non-profit organization in 1972. He is the author and co-author of numerous texts and articles on various aspects of jail planning, design, and operations. For more information, contact him at [rod@correction.org](mailto:rod@correction.org), 925 Johnson Drive, Gettysburg, PA 17325, or (717) 338-9100.*

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## 19<sup>th</sup> NSA Staffing Analysis Article Submitted February 2009

Rod Miller and John Wetzel

### Using New “Jail Vulnerability Assessment” Tools to Improve Safety and Security: Identifying and Describing *Threats*

#### INTRODUCTION

This article continues NSA’s focus on jail staffing, using the National Institute of Corrections (NIC) staffing analysis methodologies as a foundation.<sup>2</sup> NIC is in the process of finalizing the third edition of its *Staffing Analysis Workbook for Jails*.

In the last issue we introduced another new NIC project-- “jail vulnerability assessment.” The jail vulnerability assessment process and its associated resources have the primary goals of:

- Improving jail safety and security
- Promoting the development and implementation of *continuous* safety and security improvement practices
- Instilling a sense of ownership and empowerment to staff at all levels of the organization with regard to continuous safety and security improvements

One of the principles on which the JVA process is built is that “*proper staffing is essential.*” Maintaining safety and security demands sufficient employees who are:

- Qualified
- Directed by policies and procedures
- Properly trained
- Effectively supervised
- Properly deployed (at the right place, at the right time)

#### The Jail Vulnerability Assessment (JVA) Process

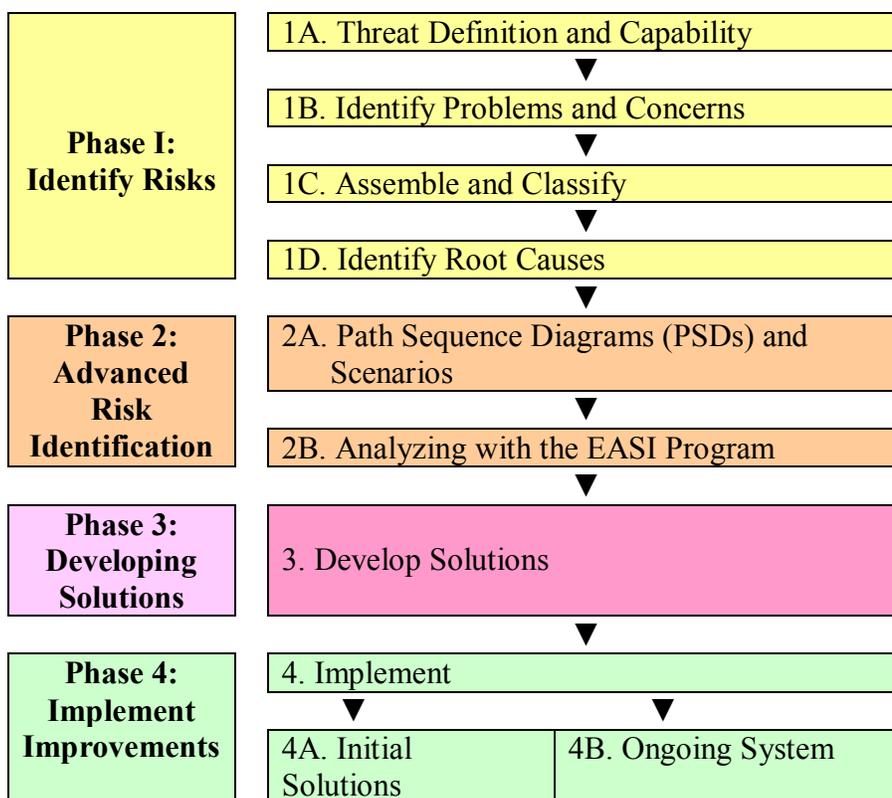
The JVA process is comprised of four phases of activity. The first three phases examine every facet of the jail setting, identifying problems and concerns, corresponding causes, and solutions. The fourth and final phase sets the stage for ongoing, continuous activities.

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<sup>2</sup> Miller, Rod, Dennis Liebert and John Wetzel. *NIC Jail Staffing Analysis Workbook, First Edition, Second Edition and Third Edition (under development)*. 1987 - 2009. National Institute of Corrections, Washington D.C. [www.nicic.org](http://www.nicic.org)

Figure 1 presents the four phases and the steps associated with each. The process is comprised of a series of *consecutive* steps, each building on the preceding. To realize the most value from the process, all steps should be completed in order. However, individual phases or even steps may prove useful to address specific issues or problems, if it is not feasible to implement the entire process. However, it is important to note that each step is important to achieving the goal of *continuous security improvement*.

**Figure 1: Jail Vulnerability Assessment Process**



Each phase of the JVA process was briefly reviewed in the previous article. In this article we examine the first task that identifies threats and describes their capabilities.

### Trends in the Jail Setting

Jails are dynamic settings that face change on all fronts. Maintaining safety and security demands acute awareness of the evolving context. Each jail presents its own constellation of physical, technology and operational challenges. At a national training event in 2008, participants from nine counties identified the following trends in their jails.

## Figure 2: Changes Reported by Jail Managers

### Facilities

- Although there is some new construction, “new” is not necessarily better<sup>3</sup>
- Crowding is common in most jails
- Aging facilities
- Condition deteriorating from lack of maintenance and repair
- Poor design
- More jails converted from other uses (e.g. hospital, mental hospital)
- Facilities designed for lower security inmates are being used for higher security

### Technology

- Has improved and is sometimes less expensive than before
- Often inappropriately used instead of staff, rather than to enhance staff performance
- Extensive use of closed circuit television (CCTV)
- Increased recording of inmate and staff activities
- High-tech systems, such as hand-held PDA and touch screens (which often break)
- Some new technology fosters staff complacency (over-reliance)
- Costs sometimes prohibit acquiring technology that would enhance safety
- Continuing confusion about the difference between “observation” and “supervision”
- Technology failures that take too long to fix because of a lack of local expertise.

### Operations

#### Inmates

- Younger and older
- More violent
- Increasing number of inmates with mental health needs
- More medical needs
- More gangs
- Increasing ethnic and racial diversity
- More predatory inmates
- Fewer “good” inmates
- More women

#### Staffing

- Increasing turnover

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<sup>3</sup> Many jail managers report disappointment with new facilities, often because operators were not fully involved with all aspects of planning and design.

- Lower retention rates
- High rate of retirement
- Eroding work ethic with younger employees
- Generational issues and challenges
- Difficulties with recruiting and screening
- Current work force is “worn out”
- Employee tenure is decreasing
- New employees have misconceptions about the jail and their job
- More difficulty delivering effective training

#### Funding

- More competition with other agencies for operating funds
- Sometimes encounter hiring “slow downs” or freezes
- Often not allocated funds that are requested

The preceding list presents *some* of the changes that challenge jails and their operators. Many of these changes are incremental and are not fully appreciated by jail personnel as they occur-- it is important to step back and look back to identify the changes that have been encountered as a prelude to the jail vulnerability assessment process.

### **Phase One of the JVA Process**

The first phase of the JVA process guides participants through a critical examination of all aspects of the facility and its operation. This examination compares current facilities, technology, and operations to the specific threats that are identified in Step 1A. Threat “capabilities” are also identified.

The examination involves a series of excursions into the facility, each time focusing on a new perspective. Six dimensions are explored:

#### Elements of Safety and Security

1. Facilities – aspects of the physical plant design, construction and condition
2. Technology – including any application in which technology is used to support or augment security and/or safety features
3. Operations – focuses primarily on the combination of staff, policy, and procedure and the interaction of the three

#### Elements of Physical Protection Systems

4. Detection – identifying a potential problem
5. Delay – features or systems designed to slow down completion of a negative event
6. Response – the amount of time (usually in seconds) it takes a response force to respond and resolve a negative event.

At the end of this phase, all findings are assembled and classified, and the *causes* of the deficiencies are explored.

## A. Step 1A: Defining Threats and Threat Capabilities

Step 1A requires a careful consideration of the risks that are of concern to you, your funding sources, your colleagues, and other stakeholders. There are many potential threats to the safety and security of a jail. Threat definition is the foundation on which the vulnerability assessment is built. A feature of your facility, such as a cell lock, may be of great concern if you have defined escape as a threat. The same lock, located in a low security setting in which escape is not a threat, will not raise alarms. This process hinges on the clear definition of, and conscious decisions about threats.

### Defining Threats

To start this process, ask yourself “What potential negative events am I most concerned about occurring in my facility?” Develop a list. Ask other stakeholders the same question--the answers may surprise you. Sheriffs, county commissioners, budget officials, law enforcement agencies and other stakeholders should be asked to express their concerns at this point in the process.

After you have compiled an initial list, narrow it down or categorize it into threats. Although Merriam Webster defines a threat as “*an indication of something impending,*” in the jail context a threat is defined in terms of events and activities that are to be prevented or avoided.

As a starting point, review the following list of potential threats was compiled from a series of training sessions:

- Escape by one or more prisoners
- Unauthorized entry into the facility
- Unauthorized movement within the facility
- Introduction of contraband into the facility
- Inmate assault on staff
- Inmate assault on another inmate
- Major disturbance or riot
- Inmate suicide or attempt
- External attack on the facility
- Terrorism
- Natural disaster such as a hurricane, tornado, or flood
- “Political” threat<sup>4</sup>

The preceding list should be considered a starting point for the threat definition process. The objective is to describe what is important and of most concern at this time.

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<sup>4</sup> While different than the other threats on the list, we have found that many jail operators are concerned about the political dimensions of jail operations. In one facility, employees expressed concern that visitors and volunteers would complain to elected officials if they are “inconvenienced” during their visit to the jail.

Examining data and information may help to identify threats that are the most concern. Facilities involved with the accreditation process are familiar with the need to collect and analyze critical incident data and more recently, the expanding series of “outcome measures” that are integral to the new performance-based standards.<sup>5</sup> These sources offer some additional ideas for threat identification and may also help to assign priority to threats.

There are many undesirable events to consider. Tailor your threat definition to your specific needs and priorities.

As you finish your threat definition process, you feel uncomfortable about your facility and operations. After exploring and defining threats for his facility, one training participant exclaimed that he “would never sleep again.” The final phase of the JVA process implements an ongoing process that has brought peaceful nights to many jail managers.

Remember, you cannot assess the vulnerability of your facility, technology, and operations without clearly defining the threats that will be challenging them. Define several threats, clearly and concisely. If some are more pressing than others, put the list in order of priority.

### Defining Threat Capabilities

After threats have been described, it is time to determine the *capabilities* that threat participants might bring to bear. Not all threats are equal, and not all threat participants bring the same constellation of capabilities to their tasks.

Threat participants bring a variety of resources, including:

- Knowledge
- Skills
- Abilities

Do not underestimate your adversaries. In one county, an inmate was able to escape through the wall of a jail. It turned out that he had been on the construction crew that renovated the facility for use as a jail and knew exactly what was in the exterior wall and how to exploit its weaknesses. The *knowledge* of the jail’s construction was a critical element of his success. Also, many jurisdictions involve the community in the planning and construction of new jails and this often includes frequent public tours and even overnight stays. While this is an effective strategy, it reminds us not underestimate the amount of knowledge inmates may have about our jails. Similarly, consider the skills and abilities that threat participants might possess.

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<sup>5</sup> See our staffing analysis articles in the Summer and Fall 2008 issues of *Sheriff* magazine.

Inmate knowledge often includes a working knowledge of jail procedures and practices. Do not fall into the trap of thinking that “our inmates aren’t here long enough to worry about them figuring out our practices.” Although many jail inmates are booked and released within a few days, the majority of inmates who take up the jail beds spend months in confinement. Also, many inmates return to jail several times. We also need to acknowledge that many of our employees discuss safety and security practices in situations that allow inmates to hear.

Inmates often bring skills from the community, such as construction or electronics experience. The Pennsylvania Department of Corrections discovered that they had an inmate who had installed exterior sensor systems before he was incarcerated. Some inmates have abilities that may enhance their tactics; an inmate who is a skilled scam artist will be more formidable when using deceit.

The availability of contraband, especially weapons or tools, is a factor that may affect threat capabilities.

If inmates are participants in your threats, it is important to understand what types of inmates you have. Examining the characteristics of your inmate population will yield insights into their capabilities.

As you describe your threat capabilities, remember that inmates and other threat participants may employ various tactics, including:

- Stealth
- Force
- Deceit

An example of an inmate utilizing stealth would be to hide in a garbage can and be taken out of the secure facility. An example of deceit would be an inmate who acquires a staff uniform and walks out the staff exit.

One capability that we allow inmates to possess is control over an aspect of their confinement or daily activities. One of the common themes we see when bad events happen (such as escape) is that the inmate had the ability to control his/her environment to the extent that they could improve their chances of success. For example, the inmate who hid in the garbage can above. It is possible, if not likely, that he was allowed to “volunteer” to be a cleaner and also potentially had some control over the timing. Be especially alert to any situation in which inmates have some measure of control and consider adding this to your list of capabilities. Sometimes we allow inmates to determine where they go and when they go there. Similarly, inmates sometimes affect the timing of certain activities.

At the end of this step, a concise list of priority threats is completed. For each threat, the corresponding capabilities of threat participants should be described. As the jail facility,

technology, and operations are examined in subsequent steps, findings will be “colored” by these threats and their capabilities.

The *Jail Vulnerability Assessment Handbook* describes this step of the process in more detail and provides samples, lists and helpful tools. For a copy of the final draft, email [rod@correction.org](mailto:rod@correction.org).

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20th Jail Staffing Article Submitted July 2009

## **Scheduling Jail Employees: Research Explores How “Shift Work”<sup>1</sup> Affects Health and Performance**

*Scheduling jail staff poses many challenges and asks managers to balance competing demands and interests. This is the 20th article in the NSA jail staffing series. In the seventh article the authors introduced five attributes of a good staff schedule: efficient, sufficient, consistent, attractive and healthy.*

*The following article by Richard Wener reports on his findings from an extensive examination of research that has explored the implications of “shift work” -- employee shifts that do not fall within the typical daytime work day. His findings touch on the issues of health, consistency and efficiency.*

### **Shift Work, Sleep Deprivation and jail schedules**

Richard Wener, PhD., Associate Professor of Psychology  
Polytechnic University of NYU

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

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<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.

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).

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 at 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).

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# Don't Confuse Observation with Inmate Supervision

*By Rod Miller, founder CRS and John Wetzel, Warden, Franklin County Jail, Chambersburg, PA*

Supervising inmates is the heart of jail staffing efforts. Some sheriffs and managers believe that their jail staff are supervising inmates when in too many cases they are, at best, only observing inmates. "Supervision" and "observation" are as different as a safe, secure jail in which inmate behavior is managed, and a jail in which inmates control many aspects.

This article continues the series on jail staffing and staffing analysis. Previous installments have underscored the importance of effective inmate supervision as a requisite for safe and secure jail operations. But some jail practitioners, and some of the professionals who develop new jails, do not understand the difference between supervision and observation. This article clarifies the difference and identifies the benefits of effectively supervising inmates.

## Effective Supervision Is a Key to Safety and Security

A new publication from the National Institute of Corrections (NIC) presents effective inmate management strategies.<sup>1</sup> According to the authors:

"...most American jails were built in the era when physical containment was stressed to the virtual exclusion of inmate management. Jail professionals now realize, however, that all jails, regardless of design, are responsible for managing inmate behavior to ensure safety and security."

The authors go on to assert that effective inmate supervision is one of the foundations for managing inmate behavior, and that:

"Because supervision is dependent on staff interaction with inmates, the jail must develop strategies to decrease barriers between staff and inmates."

<sup>1</sup> Hutchinson, Virginia, Kristin Keller, Thomas Reid, Ph.D. Inmate Behavior Management: The Key to a Safe and Secure Jail. National Institute of Corrections, U.S. Department of Justice. Washington D.C. August 2009.

Unfortunately, many jails designed in the past twenty years actually increase the barriers between inmates and staff, in a misguided attempt to reduce staffing needs and under the guise of protecting staff. The result for many counties are jails that are less safe, less secure, and which require significantly more staff than expected to offset the faulty design assumptions and to provide effective supervision.

## What Is Inmate Supervision?

The Encarta Dictionary defines "supervise" as:

*"...to be in charge of a group of people engaged in an activity or task and keep order or ensure that they perform it correctly."*

A jail officer in a glassed in control room has charge of electronics, not inmates.

Many state jail standards require frequent "health and welfare checks" to confirm the presence and well-being of every inmate. Tennessee and Idaho require such inmate checks at least every 30 minutes for all inmates; Maine requires at least every 60 minutes for minimum security inmates, 30 minutes for medium, and 15 minutes for maximum. Ohio requires 60 minutes for all inmates.

The American Correctional Association's Standards for Small Jails require every inmate to be "personally observed by a correctional officer at least every 30 minutes, but on an irregular schedule."

## "Personally Observe?"

Some of the confusion around the issue of inmate supervision is caused by the longstanding use of the term "personally observe" in caselaw and standards.

The jail standards developed by the Washington Association of Sheriffs and Police Chiefs (WASPC) attempt to define the periodic inmate checks:

**Inmate Health and Welfare Checks.** Every inmate must be personally observed by a qualified person, at least every 60 minutes, and more frequently when safety, security or health concerns have been identified for an inmate.

A 1993 Jail Bulletin issued by state officials in Nebraska goes a bit further in an attempt to clarify the nature of inmate supervision.

Nebraska Jail Standards require that jail staff view inmates personally at least once every hour and document these checks...At a minimum, personal checks should include observing each inmate at least hourly to make sure they are alive and well. Jail officers should be able to see the inmate's flesh and observe breathing if an inmate is in his/her bunk.

Many state and local procedures use the term "living, breathing flesh" to describe the requirements for personal observation. Connecticut and Vermont require "direct observation by a correctional officer" for inmates in special management units.

Although the term "observe" is used frequently to describe practices that are intended to produce supervision, it is clear that a supervising officer must be close enough to each inmate to ascertain their physical condition.

In an article entitled "Implementing Effective Inmate Supervision in Jails,"<sup>2</sup> Kris Keller suggests that historically "...staff safety has been perceived as dependent on separation from inmates by physical barriers. As a result, inmates have been left mostly unsupervised and to their own devices. This has resulted in many of the problems traditionally associated with jails."

Keller goes on to suggest that "Effective inmate supervision is active inmate supervision. The active and continuous supervision of inmates by staff, and the documentation of this supervision, enhance the jail's ability to ensure the safety of inmates, staff and visitors."

A 1974 federal district court decision<sup>3</sup> found electronic surveillance to be inadequate, by itself. It went on to describe some of the elements of supervision. According to the court:

"The purpose of personal supervision is to see, to hear, to sense the moods of prisoners, to anticipate danger, to provide humanness instead of the cold eye of the T.V. camera, and to be able to react quickly and efficiently."

Assuming that observing inmates via CCTV is the same as achieving supervision is like saying you were at the superbowl when you only watched it on TV in your living room.

## Effective Supervision Brings Staff and Inmates Closer

Jail designs that isolate staff from inmates behind one or more barriers make it more difficult to implement effective supervision. Such designs are often predicated on the assumption that an officer who is observing inmates from a distance is also supervising them. The authors of the new NIC publication argue that barriers between staff and inmates prevent supervision:

"Security doors that offer limited or no view into the housing units, long corridors that separate staff areas from housing units, and multiple security doors are some of the literal barriers that may separate staff and inmates. These barriers prevent staff from seeing, hearing, and sensing the mood and activities of the inmates. Where staff do not have a presence, they do not have control."

Some would argue that the glassed-in control center that has views into some inmate housing areas fulfills the need for "presence." In practice, that is not the case.

This may seem counter-intuitive to some. But eliminating barriers and increasing staff contact with inmates reduces incidents and thereby increases safety for all—including staff.

## Looks Good On Paper, But...

Some designers emphasize improved "sight lines" from fixed posts as an efficient way to provide supervision. But isolating staff in this way makes them spectators instead of managers. They must rely on electronic means of communication, such as intercoms. They are usually tied to their posts because they operate security controls, such as door controls.

Figure 1 displays the floor plan for several housing units in a "podular remote" jail that was designed opened in 1995. The premise of this design is that one officer, located in the control room, is able to see all of the housing units and their occupants on a continuous basis. The annotations shown on the right side of Figure 1 suggest the theoretical lines of sight that an officer might have from the fixed control center.

<sup>2</sup> Keller, Kris. *Implementing Effective Inmate Supervision in Jails*. Corrections Today. American Correctional Association, Alexandria VA. July 2002.

<sup>3</sup> Bay County Jail Inmates v. Bay County Board of Commissioners, 74-10056 (E.D.Mich.).



Figure 1: Potential Sight Lines from a Central Control Room: Identifies many areas in the housing units that are not viewable from the fixed post. In practice, the sight lines anticipated in the drawings prove overly optimistic.



Figure 2: View from Control Into Housing Unit: Figure 2 presents a photo of the view into one of the housing units, standing in the corridor adjacent to the control center. The walls, security doors, and window frames substantially reduce sight lines.

While the preceding floor plan appears to improve sight lines compared to the earlier design, the photos in Figures 4 and 5 illustrate the actual views into housing in the facility.

The photos in Figures 4 and 5 suggest that there are more blind spots in many of the housing units than there are lines of sight. In an effort to compensate for inadequate sight lines many designers add closed circuit television (CCTV) cameras in housing units and in other areas of the facility. The results are inadequate, and unacceptable in terms of standards, caselaw and prevailing professional practices.

The preceding photos make it clear that a control room officer is unable to confirm that all inmates are present, let alone vouching for their physical condition (living, breathing flesh).

## Observation Does Not Replace Supervision

Secure control rooms that attempt to provide sight lines into inmate housing areas are not, by themselves, a bad idea. But when they are sold as an alternative to effective inmate supervision practices they are a disservice to all parties. Control rooms, properly used, augment but do not replace supervision.

The facility from which the preceding plans and photos were drawn learned this the hard way. Staffing plans did not anticipate sufficient officer presence outside of control rooms and inmate supervision was not achieved. The jail experienced serious problems from the day it opened. After using the staffing analysis tools and techniques, offi-

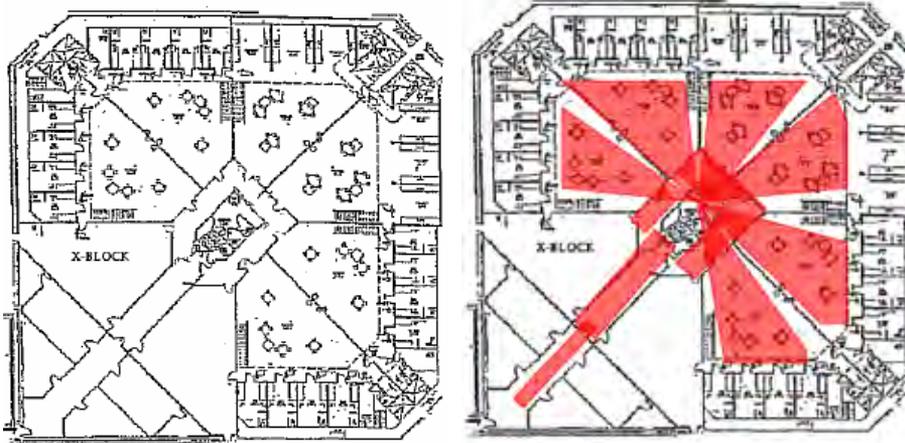


Figure 3: Floor Plan and Theoretical Sight Lines: Shows the layout of an addition to the jail that was opened in 2000, using a similar design approach. The diagram on the right side of Figure 3 shows the theoretical sight lines.



Figure 4: View Into Housing Units from Front of Control Room



Figure 5: View Into Several Housing Units From Rear of Control Room

cials decided to nearly double security staffing levels. They approved over forty new positions immediately to improve supervision, and made plans for even more in the next budget year. Some of the control rooms will be closed in favor of putting officers in the housing units, at least intermittently.

## Debugging More Myths

The next article of this series will explore jail design myths and misconceptions in more detail. It will also examine the uses, and misuses, of electronic monitoring systems. ★

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