Applying New Vulnerability Assessment Tools in Hennepin County

by
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Last year, 12 county jails received a week of training that introduced a powerful new risk management tool developed by the National Institute of Justice (NIJ) and the American Correctional Association (ACA). Building on vulnerability assessment techniques developed by Sandia National Laboratories to protect nuclear power plants and weapons, the ACA project developed a similar tool for use in state prisons. ACA's Correctional Vulnerability Assessment Handbook (CVA)[1] explains the vulnerability assessment process and serves as the centerpiece of additional resources that have been developed with NIC funding.[2]

ACA first provided vulnerability assessment training to more than half of the nation's state corrections agencies. The training was then delivered to teams of staff from local correctional agencies in 12 counties, including some Large Jail Network jurisdictions:

- Alexandria County, Virginia
- Arlington County, Virginia
- Clark County, Nevada
- Franklin County, Pennsylvania
- Hennepin County, Minnesota
- Hillsborough County, Florida
- Jackson County, Missouri
- Marion County, Indiana
- Mecklenburg County, North Carolina
- Montgomery County, Maryland
- Thurston County, Washington
- Tulsa County, Oklahoma.

1. Rod Miller, Robert J. Verdeyen, J.T. O'Brien, and Donald Romine, *Correctional Vulnerability Assessment Handbook*, Final Draft. Alexandria, Virginia: American Correctional Association, 2006. Excerpts adapted for this article with permission.

2. CVA resources include the Handbook, an extensive PowerPoint-based training program, forms, checklists, and samples.

Each participant left the training with a new perspective that looks at jail facilities, technology, and operations through the eyes of inmates and other potential adversaries. But applying the complete CVA process proved difficult in jails. In Hennepin County, we are now finding effective ways to employ the results of our CVA studies.

What Is a "Vulnerability Assessment"?

NIJ describes a corrections vulnerability assessment (CVA) as:

- A systematic evaluation in which…
- Qualitative and quantitative techniques are used…
- To determine the effectiveness of operational and physical protection systems…
- Against specific undesired events or a range of potential threats.

A unique analytical tool, the Estimate of Adversarial Sequence Interruption (EASI) computer program, is central to the implementation of a CVA. The EASI tool actually calculates the odds that an undesired event—such as an escape or the introduction of contraband—will be successfully completed. It also points the agency to specific changes in practices, technology, and facility configuration that may be most effective in reducing the level of risk.

How Is CVA Different from Other Risk Assessments or Security Audits?

A CVA is different from security audits in several ways, because a CVA:

- Considers three dimensions of the correctional setting: physical plant, technology, and operations;
- Incorporates a variety of staff perspectives by involving a diverse team in the assessment process;
- Examines the correctional setting from all physical angles;
- Connects a series of elements instead of looking at them separately;
- Puts the elements in motion;
- Tests the elements;
- Examines the elements under different conditions and at different times of day;
- Quantifies the risk using computer analytics; and
- Tests the effectiveness of potential risk reduction actions.

What Is Involved in the CVA Methodology?

A team of facility staff take part in the CVA process. Typically teams will have five or more members, including an administrator, a policy/procedure writer, a person with technical/physical plant experience, and someone who is responsible for security. There are nine steps in the CVA methodology. Figure 1 shows these steps and provides a brief commentary on each.

Figure 1. Steps in the Correctional Vulnerability Assessment Process

CVA Steps		Purpose/Outcome
1) Define the threat(s)		Identifies the threat to be evaluated, such as escape, contraband introduction, etc.
2) Characterize the institution	**3) Define the threat capability**	Describes the setting (2) and considers inmate or other actors' capabilities to achieve the threat in that context (3)
4) Characterize the facility's physical protection systems (PPS) and operations		Describes the facility and its operations
5) Analyze PPS and operations		Collects physical and operational data and analyzes facilities and operations
6) Develop threat-specific path sequence diagrams (PSD)		Identifies how a series of steps might allow a threat attempt to succeed
7) Apply the EASI analytical model to assess risk		Uses the Excel-based tool to predict the likelihood that the threat will succeed
8) Evaluate whether the assessed risk is acceptable		Determines whether something must be done to reduce the risk
If the risk is acceptable, the process is complete for this threat.	*If the risk is NOT acceptable:*	
9) Revise the facility design, operations, technology, and/or assumptions		Uses the EASI tool to examine how changes in physical plant, technology, and/or operations affect the likelihood of success of the threat attempt, or to identify errors in underlying assumptions

The CVA team spends roughly a week on site, at all hours of the day, testing systems and operations and collecting data for the scenarios. Each element of a possible threat is researched and calculated. The probabilities of detection and delay are calculated, along with the response time by staff and security systems. This information is entered into the EASI program, which calculates the probability of success for the adversary.

If escapes are the risk being assessed, the scenario might be described as judging a race between the facility and the inmate. To determine who wins the race, you must:

- Understand the institution's protection system (physical and operational),
- Determine what the inmate can and must do to escape,
- Compare the institution's protection system with the inmate's possible actions, and
- See who wins by looking at the time race.

The outcome of the CVA process is one or more very specific threat scenarios that describe a series of steps an adversary might use to implement a threat, that have been tested, and for which solutions have been posed. In the prison setting, a CVA identifies many issues and weaknesses, but it continually narrows the focus until a few scenarios are identified and analyzed. Although many helpful insights are discovered, these are secondary to the scenario in a CVA.

After the NIC training, it seemed to many participants that a CVA was an "all or nothing" endeavor. The level of commitment for training and implementation has proven daunting in jails that lack the staff and other resources of a larger prison system. Ways to further adapt the CVA process and training for jails are now in development.

Hennepin County Finds New Uses for CVA

When our team returned to our jail facility after the training in October 2006, we discovered many potential vulnerabilities because the training had sharpened our skills. We have not yet trained additional colleagues because of the length of the training (5 days) and the complexity of the material. But we discovered the utility of many of the vulnerability assessment techniques and tools when we launched our first-ever comprehensive staffing analysis.

We are following the staffing analysis methodology described in NIC's *Staffing Analysis Workbook for Jails*, Second Edition (Rod Miller and Dennis Liebert, 2003). Our first use for the CVA process presented itself in Step 1 of the staffing analysis, "Profiling the Facility." We are using a series of CVA checklists and forms to characterize and analyze our physical setting in terms of:

- Location,
- Site,
- Facility design, layout, and construction, and
- Technical systems (video, alarms, sensors, and detectors).

We also are creating baseline drawings and diagrams for our jail that depict key systems. As these are completed, we analyze them by considering several aspects that are articulated in the CVA approach:

- Proximity (what is near each element),
- Adjacency (what is next to each element),
- Visibility and observation (what can be seen and what cannot),
- Continuity (gaps and breaks), and
- Condition (what has deteriorated).

These tools and techniques are proving effective as we examine the context in which staffing is provided and convey our findings to other stakeholders.

We will be applying more CVA tools when we reach Step 8 of the NIC staffing analysis process, which involves evaluating and improving the draft staffing plan. NIC suggests developing a series of scenarios as one of several activities to evaluate the sufficiency of draft staffing plans. Clearly, the CVA approach will find more application at this point in our process.

Project Will Create Jail Vulnerability Assessment Resources

In September 2007, NIC signed a cooperative agreement with CRS, Inc., to adapt the CVA materials for use in jails. The project is headed by Rod Miller, who was involved with the development and delivery of the CVA resources for 5 years though an agreement with the American Correctional Association. The NIC project will expand the scope of threats that are addressed to include more threats that apply specifically in jails. It will adapt all of the current CVA resources for use in jails, producing a diverse and flexible set of tools that may be used in various jail settings.

The American Jail Association is presenting a CVA training program in November 2007, hosted by the Franklin County (Pennsylvania) jail. Warden John Wetzel participated in the October 2006 ACA training and has a central role in the new cooperative agreement.

Interested persons can contact Rod Miller at rod@correction.org for more information about the CVA toolkit, which includes the *CVA Handbook* and its appendices with many helpful aids and checklists, the EASI program in an Excel file, and a PowerPoint-based training program. An email notification list is also being developed where new materials will be announced as they become available for use in jails. ■

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