



Hospital Resource Vulnerability Assessment (RVA) Implementation Guide

Quick tips to get started

- Optimized for Excel 2013 and Windows 8 environment (though should work on recent versions of Excel for Mac)
- Save the document to your desktop – select a name that’s appropriate for ‘your hospital RVA’
- Excel 2013 users must ‘enable editing’ to use when prompted
- Excel 2010 users must ‘enable editing’ on the yellow bar at top, then ‘enable content’ and finally answer yes to ‘do you want to make this a trusted document?’ – you should only have to do this once
- Use the homepage buttons to navigate the tabs
- Do NOT try to re-name the tabs or rows
- See more detailed information below about how to circulate the document and import the information (Implementation Process section)

Purpose

This document is designed to facilitate the use of the Resource Vulnerability Assessment (RVA) by providing additional information and instructions to hospital emergency managers.

Background

Historically, hospitals have completed a Hazard Vulnerability Assessment (HVA) and updated this yearly according to requirements from hospital standards organizations. Though the HVA identifies *threats* to hospital operations there has not been a specific tool to date that allows a yearly assessment of the *resources* available at a hospital to respond to incidents, nor to identify and prioritize gaps resulting from unmet resource requirements.

Intended application and use

The RVA is intended to be a voluntary tool to assist hospitals with identifying and prioritizing preparedness gaps and creating a yearly analysis and prioritization cycle, complementing the HVA. The RVA examines the specific resources of the hospital including the *plans, space, staff*, and *supply* considerations.

Methods

The RVA is divided into two functional areas: clinical (for example, critical care as a category) and support services (for example, laboratory category) which are supplemented by implementation information and supply inventory sheets.

For each category, the emergency manager works with a designated supervisor to complete the tool, agreeing on goals and identifying gaps. If a gap is identified (answer ‘no’ to any ‘goal met’ question) then the rest of the information can get filled in to define the gap. The gaps are then prioritized as the user selects a numeric ranking for each of five variables:



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- Likelihood of activation/use of the resource in an incident – i.e. is the resource one that gets used in nearly all major incidents (e.g. notification system) or only in a few (e.g. burn supplies)
- Impact – are only a few persons likely to be affected by a resource gap, or the whole hospital?
- Risk – what is the risk to safety/life if the gap is not closed?
- Current preparedness – what is the level of preparedness in this area currently?
- Cost – this modifier can allow a facility to determine priorities for longer-term investments as well as short-term corrections and closures.

The formula used by the program is:

$$\text{Likelihood} + \text{Impact} + \text{Risk} / \text{current preparedness} = \text{priority}$$

The cost modifier adjusts the priority by relative cost adjustment (< \$10k keeps value neutral, \$10k-50k reduces priority value by 1/3, > \$50k reduces priority value by half). This result is expressed separately to allow the facility to look at the ranked gaps relative to cost as well as the raw value.

Commitment

Initial completion of the RVA involves a significant commitment of time by the emergency manager, averaging about 20 hours. This time can be substantially lessened if the supervisors are well-versed in emergency preparedness and aware of their resources. For some supervisors, the spreadsheet will take less than an hour. For others, it may take several hours as data may need to be obtained. However, in the following years, data will simply need to be updated and the process will be familiar, dramatically reducing the work to complete the tool.

Results

The RVA generates a rank-order list of gaps based on priority as well as a summary of beds, staff, and other metrics that can easily be shared with supervisors, committees, hospital administration, and a summary that can be shared with healthcare coalition partners. Additionally, the hospital's summary can be uploaded to a tool that can aggregate summaries from multiple facilities, yielding a picture of gaps and priorities across a coalition or healthcare system.

Benefits

During the development and pilot testing of the tool it was found that the supervisors for the functional areas often were either unaware of specific assets and issues, or felt they were being addressed by emergency management or others. As part of the process, supervisors became empowered to seek out information within their area, develop proposals for gap remediation, and maintain accountability for their 'portfolio' of issues. The tool also fostered concrete engagement and goal-setting by the area supervisors. The RVA was also used to demonstrate



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gaps to administrative leadership and led to major resource commitments to close identified gaps and better awareness of emergency management priorities and activities. The summary generated after each annual update can provide the basis for a yearly report to hospital executive leadership.

Implementation process

First, the emergency manager should review the tool and introduce it to the emergency management committee for discussion with the idea that this will become an annual strategic process. An appropriate timeframe to initiate the analysis should be agreed upon. Late fall is often a good time to collect the data so that it can inform an annual briefing to executive leadership early in the following calendar year and also inform the emergency management agenda and administrative commitments that year.

The emergency manager has significant discretion as to how much work they are willing to take on in completing the tool with the supervisors. If the emergency manager has the time they can use this as a dialogue and walk the supervisors through the tool. Or, the manager can simply provide the tool along with a brief introduction and then review and vet the supervisor data submitted with follow up on any data or content issues.

The emergency manager should download the tool and name it according to their hospital. Upon opening the file (which is optimized for Windows 8 and standard displays) they **must select the bar near the top of the screen to 'enable editing or 'enable macros'**. They should familiarize themselves with the tool and they may add (but not change existing) rows on each page to account for unique resources (for example, a hyperbaric chamber or specific security assets that are not listed). The emergency manager can only add rows **prior** to sending out the tool for supervisors to complete (otherwise, added rows will not import into the manager's master copy) – thus, it may be best to review the sheet with the supervisor and agree on edits prior to sending out for completion. Alternatively, the supervisors can look over the sheet and communicate any missing resources or questions via email or other means.¹

The initial customization (if desired/applicable) and orientation to the tool is critical for the supervisors to understand the process and need to invest time in completing the RVA. They should also understand that this is an iterative tool, and that each year they will need to update the tool (a far less intensive effort – usually involving minimal time) and their priorities, helping justify the initial investment of time.

Following the introduction of the tool to the supervisors the master file is circulated to the

¹ Note that if rows are added by supervisors themselves (and not to the master file) they will *not* import into the master file. Note that custom rows will be shown on the facility summary but will *not* export to a coalition summary.



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supervisors for completion. The supervisor downloads the file to their desktop and names it according to their functional area (e.g. laboratory). The supervisor should only fill in data on their assigned page(s) of the document. Once the data collection is complete the file is emailed back to the emergency manager who imports the file using the gray button 'import data' on the tool homepage. The data from the supervisor's file will populate the master file with the data.²

The emergency manager will need to review the data to assure:

- Realistic numbers were submitted
- Realistic priorities were chosen relative to the gap (i.e. appropriate weighting of factors)
- Comments and notes support methods for closing the gap

The emergency manager and the emergency management committee may also have ideas for the supervisors about alternate gap closure resources or options and can partner with them to explore these. Once this vetting and discussion process is completed the RVA can be made final and prepared for presentation and action.

Refinement and future directions

The RVA was developed with the assistance of the Hospital Preparedness Program (HPP) grant under the Assistant Secretary for Preparedness and Response, U.S. Dept. of Health and Human Services (HHS/ASPR). It is thus in the public domain, not subject to copyright, and may not be used for profit.

The developers and the HPP program recognize that this tool was developed for larger hospitals and that it may not meet the needs of all facilities. As with any new application there may be issues both technical and procedural. We would welcome feedback on how to improve the tool and its implementation guide, as well as suggestions on alternate versions. Suggestions should be emailed to hpp@hhs.gov with RVA in the subject line or you may pass along suggestions and ideas to the HPP grant Field Project Officer in your region.

Frequently Asked Questions

(May be helpful to facilitate introduction to supervisors and administration/committee members)

1. **What is this tool?** – The Resource Vulnerability Assessment (RVA) is a tool that healthcare facilities can use to look at the broad range of resources (plans, equipment, staff) that they have in a number of different areas (clinical and support services) to determine where gaps exist between what they want and what they currently have.
2. **Why was it developed?** – Emergency Managers complete an annual Hazard Vulnerability Assessment (HVA) that helps prioritize hazards in order to focus exercise

² Note that it is critical that supervisors complete only their assigned sheet(s)! Data appearing in other sheets may replace data from another source if already present.

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scenarios and preparedness activities, but does not identify resource gaps to administration nor prioritize activities to address deficiencies. Gaps often were prioritized based on subjective factors or interest level, rather than on the vulnerability that the gap created. Further, there was no way to track and prioritize gaps and progress closing them over time.

3. **Is this different than an HVA?** – Yes, though the format and calculations may look familiar (by design), the RVA looks at the resources available at the facility rather than looking at the hazard that may cause an incident. In future versions of the tool, we may be able to link specific hazards to the resources likely to be needed during a response to generate an integrated report. However, at present the RVA is designed as an ‘all-hazard’ tool assessing the gaps at the facility level.
4. **Why should I use it?** – The RVA helps identify gaps in current planning and resources at the facility and uses variables such as likelihood of use of the resource, impact, risk, current preparedness, and cost to close the gap to determine values for overall and cost-adjusted priority. This gives the Emergency Manager, administration, and the Emergency Management committee a ranked list of priority areas to address. When used in a yearly cycle, the tool should be able to demonstrate gap closure as well as drive yearly priorities for the committee. Optimally, the tool can be used to help justify time and funding investment from administration to accomplish gap closure.
5. **Will it take a lot of time?** – The initial application of the RVA does take time. The Emergency Manager in particular will need to spend time with the committee and the supervisors assuring that the goals are appropriately set and the data being inputted is valid. Fortunately, the data entry and specific needs are distributed across a range of individuals. Once this initial investment of time is completed the data carries over to the following year, making the time to complete or update the data far less. The benefit is a standardized, yearly process for assessing resource gaps and priorities that can drive work plans at the facility and can also identify common coalition/health system level gaps for attention. Additionally, it focuses supervisor’s attention on preparedness details in their area.
6. **Who was this designed for?** – The RVA was designed for hospitals, and in particular, larger facilities. The information contained is relevant to smaller facilities, but the tool may need modification in the future to better meet their specific needs.
7. **Who determines the goal/target thresholds?** – The hospital determines their threshold for the resource need. This may vary depending on the hospital role in the community (single hospital, trauma center, children’s/specialty facility, etc.) Thus, there is the potential that the hospital could set low goals and make it easier to achieve them, but the supervisors are ultimately accountable to assure that realistic targets are set.