

# Disaster Information Specialist Training and Curriculum Review

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*Jessi Van Der Volgen*

*National Library of Medicine*

*Associate Fellow 2011-2012*

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**Project Sponsors:**

Cindy Love, Technical Information Specialist, Office of Disaster Information Management Research Center Branch, Division of Specialized Information Services

Stacey Arnesen, Head, Office of Disaster Information Management Research Center Branch, Division of Specialized Information Services

## Abstract

**Objective:** The purpose of this project was for the Associate to learn about the Disaster Information Specialist program at DIMRC, earn the Disaster Information Specialization from MLA, and provide formal and informal feedback to DIMRC about the processes of curriculum development and obtaining the specialization.

**Methods:** The Associate earned 17 continuing education hours in the area of disaster information specialization and evaluated all courses on their disaster information content and method of delivery. The associate worked closely with an evaluation consultant to develop an interview guide and survey for participants in disaster information courses.

**Outcomes:** The Associate completed the requirements for the Disaster Information Specialization, summarized and evaluated the content of all five courses, and participated in multiple aspects of DIMRC programs and the development of the curriculum.

**Conclusions:** The Associate obtained the specialization from MLA, and also gained experience in curriculum development and evaluation, which can be applied to other topic areas. For an Associate working on a project with an experiential component, it is recommended that the experience combine a variety of activities for breadth of knowledge in the area and a specific objective for depth of learning.

## Introduction

The Disaster Information Management Research Center (DIMRC) is a branch of the Specialized Information Services (SIS) of the National Library of Medicine (NLM). The purpose of DIMRC is to develop and provide access to health information resources and technology for disaster preparedness, response and recovery. In order to assist information specialists in providing disaster-related information to communities, institutions, and the disaster workforce, DIMRC offers a Disaster Information Specialist Program (<http://www.sis.nlm.nih.gov/dimrc/disasterinfospecialist.html>) which includes monthly conference calls, a listserv, training courses, and other resources. As part of this program, DIMRC contracted with the Medical Library Association (MLA) to develop a series of continuing education classes on disaster information topics. This series of courses supports a Disaster Information Specialization for librarians and other interested professionals.

The Disaster Information Specialization program from MLA is a new offering and has both a basic and advanced level of participation. The basic level requires 15 contact hours from 5 prescribed courses. The advanced level requires 12 additional hours from other courses or approved educational activities. At the time this project was begun, the model curriculum and first set of courses were still under development.

The objectives for this project were for the Associate to serve as a test case in acquiring the basic level specialization, evaluate the basic level courses from a participant viewpoint, and observe and participate in other DIMRC activities, particularly those related to the development of the continuing education program.

## Methodology

This project consisted of three primary elements:

- Obtaining the Disaster Information Specialization from MLA by completing the five required basic-level courses.
- Evaluating the individual courses and learning about other evaluation methods.
- Learning about DIMRC programs by participating in a variety of DIMRC activities.

### *Obtaining the Disaster Information Specialization*

The basic level specialization is comprised of 15 contact hours from five required courses. The Associate participated in all 5 required classes as described in Table 1 for a total of 17 credit hours. The two FEMA classes were offered as asynchronous, online courses and required a short exam to receive a certificate of completion. The other three courses were taken in-person as continuing education classes at the annual meeting of the Medical Library Association in May 2012. In June 2012, the Associate applied for the Disaster Information Specialization Program by submitting the application form, fee and continuing education course documentation to MLA.

Date	Course	Format	CE Hours
3/22/12	National Incident Management System, an Introduction (FEMA, ICS-700.a)	Online	3
4/5/12	Introduction to the Incident Command System (FEMA, ICS-100.b)	Online	3
5/19/12	Disaster Health Information Sources: The Basics	In-person	4
5/24/12	U.S. Response to Disasters and Public Health Emergencies	In-person	3.5
5/24/12	Information Roles in Disaster Preparedness, Response, Recovery	In-person	3.5

**Table 1. Courses taken for completion of the basic level Disaster Information Specialization.**

### *Evaluation*

The Associate evaluated each of the five required courses from the perspective of a participant. A formal evaluation schema was not implemented, but each course was assessed on its content, delivery, and how well it met its stated objectives (Appendices A-D). In addition, the Associate developed a content summary of the two FEMA courses for the MLA course developers to utilize (Appendix E), and guide to illustrate good practices in online courses as demonstrated by the FEMA courses (Appendix F).

In order to learn more about evaluation methods, the Associate worked with Cindy Olney, an evaluation consultant for DIMRC, in developing an interview guide for conducting semi-structured interviews with librarians who had completed the disaster basics class between September 2011 and May 2012. The Associate co-facilitated three interviews over the telephone, reviewed summaries for two interviews, and summarized one interview. The Associate also pilot tested and provided feedback on an online questionnaire designed by Cindy Olney and DIMRC to be used with recent and future participants in disaster information classes.

### *Learning about DIMRC Programs*

The project sponsor regularly invited the Associate to participate in or observe activities related development and evaluation of the curriculum. The project sponsor also provided opportunities to discuss administrative issues and decision-making processes.

## **Outcomes**

### *Obtaining the Disaster Information Specialization*

Requirements for the basic level Disaster Information Specialization Program were met and the certificate of completion was received (Appendix G).

### *Evaluation*

In working with the evaluation consultant, the Associate learned about good practices in interviews and surveys. Topics discussed included defining objectives and how to measure if

they are being met, what a logic model is, and best practices in developing interview guides and surveys. The Associate also provided ongoing feedback to the project sponsor regarding observations and experiences in pursuing the specialization.

Other products of evaluation efforts are:

- Content summaries of two online FEMA courses
- Notes on effective online content delivery
- Summaries and feedback for three in-person MLA classes
- Summary of one participant interview

The interview summary is not included here because the participant was informed that the interview would not be shared outside of DIMRC, except as anonymized in summary with other interviews.

### *Learning about DIMRC Programs*

Learning about DIMRC programs and developing a continuing education curriculum occurred through several avenues. The DIMRC staff invited the Associate to immerse herself in all activities related to the development of the Disaster Information Specialization curriculum and to participate in other Disaster Information Specialist Program offerings. Figure 1 illustrates the many learning opportunities that contributed to the Associate's learning and professional development.



**Figure 1. Activities that contributed to learning about DIMRC programs, particularly in the area of curriculum development.**

## Discussion

In attending the MLA classes, co-facilitating the interviews, and participating in the monthly conference calls it became clear that there is a growing contingent of information professionals who are interested in learning how they can use their skills to contribute to the disaster response community. Many librarians have an interest in the field and the training opportunities through MLA and through other organizations provide a good way to become acquainted with and develop some expertise with this special topic. Even though the basics classes provide a good foundation of knowledge, I think it's difficult to consider myself as truly skilled in this area until I participate in a drill or have the chance to work with first responders and others in the disaster response community.

The classes were a wonderful introduction to disaster information, not only because of the information presented, but also because of the other participants. Discussions that took place both as part of the class and informally during the breaks allowed us to hear from librarians with expertise and experience in dealing with disasters. The online FEMA classes were well-designed and incorporated multiple modalities of learning. Although DIMRC is unlikely to be able to offer such highly-produced courses, some general principles for online courses that were demonstrated could be integrated into future online offerings, such as those described in Appendix F.

This project provided a unique opportunity to see how the curriculum for a continuing education specialization is developed. This included establishing the learning objectives and discussing how the proposed courses would meet them individually or as a whole and considering how the program of study could be useful to professionals outside the traditional library environment. Working with the evaluation consultant provided valuable insight into how to incorporate evaluation into a project from the beginning, in order to know if objectives are being met and what activities are contributing to their achievement.

Engaging in a wide variety of activities with DIMRC cemented disaster information as an area of continuing professional interest for me and gave me an introduction to others in this area. Going forward, I will continue to pursue educational opportunities in this area and can see myself as one day teaching or developing courses in this area.

## Recommendations

For an Associate seeking an in-depth experience with a particular area of the library, it is recommended that the involvement be multi-faceted. There is much to be gained by working with more than one member of the division, and not only working on a specialized project, but also participating in the regular activities of the area. By working toward an achievable goal while being open to additional opportunities as they become available, the Associate can both accomplish something beneficial to the division and have a meaningful participatory experience. In a project with an experiential component, the Associate should prioritize one or two areas in which to focus, and communicate those interests to the project sponsor. For example, this project focused on curriculum development and evaluation because those were areas I wanted to learn about, but other avenues were available. Combining observation, skill development, and interaction with professionals in a specialty of significant professional interest contributed to a successful learning experience.

## Appendix A

### **Review: FEMA Independent Study Program, IS-700.a National Incident Management System (NIMS) – An Introduction and IS-100.b Introduction to the Incident Command System**

Taken: March 22 and April 5, 2012, online

These courses are each estimated to take approximately 3 hours to complete, but I found 2 hours to be a closer approximation. Because the courses are broken into modules, you can easily come back to where you left off and don't have to complete the entire course in one sitting. At the beginning of each course, you can print a lesson summary as a Word document that contains the bulk of the text of the lesson. This could serve as a reference later. I imagine that some taking the course might choose to simply print the summary and then use it to take the exam at the end, without going through the modules. While that could save time, I think the participant would miss out on some of the more interesting and helpful parts of the course, including the "Voices of Experience" and the knowledge reviews that reinforce key concepts.

Of the two classes, I found the NIMS overview (IS-700.a) to be most clearly connected and potentially useful to a librarian audience. Understanding the overall structure and components of NIMS could be important to an information specialist. Throughout the NIMS course, I found myself thinking about how the library could play a role, such as making our resources known in advance of an incident. The NIMS class discusses a need for standard terminology, organization processes, and using evidence-based practice to form the framework – all concepts that I think will resonate with librarians. The course included examples of mitigation activities that librarians can be closely involved in such as ongoing public education, outreach activities, and management of data regarding incidents. Another section covered the chain of command and roles of staff, which is helpful in understanding who you would potentially interact with as an information specialist. For those who are interested in providing information in preparation for or in response to a disaster, I think this course provides a helpful overview of the framework and an opportunity to consider how information professionals and information resources fit into the picture. The course does not, however, spell out the role of information in a disaster, and it would be up to the participant to really make connections and determine how this information could apply to their particular situation. I think this course is best situated after an introduction to disaster information. Without prior knowledge of potential ways that libraries and librarians can play a role in disaster response, it might be difficult to see how this course could be applied.

The Incident Command System class (IS-100.b) seemed to be geared more toward response professionals and volunteers directly involved with the agencies responding to a disaster and it was much harder to find takeaways that would be useful to me or information specialists. The focus of this course is on the roles and responsibilities of particular staff in the ICS, which is good for an overview of who does what and may give the information specialist a common language to use during an incident. During the course, I often wondered what part of the information to focus on or how I might potentially use it. For someone who has been involved in disaster response before, the applications might be more apparent. The ICS class refers to some principles of NIMS, so it could be helpful to recommend that the 700 class

(NIMS) be taken before the 100 class (ICS). However, I think there is enough explanation of NIMS in the ICS class that the two courses could be done in either order.

Both of the courses held my interest, but especially the NIMS course even though it took a bit longer than the ICS class. The pace of the classes seemed appropriate – they neither moved too quickly nor did they feel redundant. I think the hardest part is imagining and thinking about their applicability to your own situation. They could have used more specific examples to illustrate the framework and roles. I'll be very interested to see if the concepts and terminology from these two courses are carried over or reinforced in any of the other disaster information specialist training.

## Appendix B

### Review: Disaster Health Information Sources: The Basics

Taken: May 19, 2012, in-person

The course objectives were to enable participants to (1) be comfortable locating disaster health information, (2) be confident using a variety of disaster health databases, tools, and websites, and (3) be knowledgeable about initiatives and technologies for accessing disaster health information. The course provided an overview of disaster definitions and the disaster workforce. It discussed different types of disaster health information, the challenges in locating information, and a wide variety of places to locate these types, including PubMed, Hazlit, ASPR, CDC, WHO, the DIMRC resource guide, and many other resources. Practice using the resources in scenario exercises helped to accomplish the first and second objectives. The instructor also introduced several tools including REMM, CHEMM, and WISER to accomplish the second objective. Finally, the course covered several applications, social media sites and tools, email lists, and the NLM's Emergency Access Initiative to accomplish the third course objective. Though not mentioned in the objectives, the course also described several ways to stay current with information resources in the field, which I felt was a valuable addition.

This course supported the following knowledge, skills, and attitudes outcomes of the disaster information training program (with the strongest emphasis on those in bold):

- Understand the disaster and emergency response infrastructure
- **Know information sources and services that will support Core Competencies for Disaster Medicine and Public Health**
- **Know about emergency preparedness and disaster resources from a variety of sources, including DIMRC, the CDC, etc**
- **Be able to locate and use disaster and emergency information resources**
- Recognize librarians have a valuable role in the emergency/disaster response sector
- Feel confident that they can support the disaster and emergency response community

Throughout the course instructor used examples of possible information needs and stakeholders and gave the participants the opportunity to use the resources just reviewed. Practice in using the resources helped to reinforce which resources to use for different types of information and gave participants a chance to assess their understanding of the information just presented. It allowed learners to interact with and evaluate the databases or websites, and sometimes collaborate with other students. I think these exercises are critical to helping participants to feel confident in supporting disaster planning and response. Other participants seemed very engaged by the content and motivated to learn more about their potential roles.

Making the slides available online allowed me to download the slides, type notes on them and save my own copy, a great resource for the future. Although there is a lot of content presented in this course, it is organized well, easy to follow, and I felt as though I really left with a wealth of resources and an understanding of the scope of disaster health information.

## Appendix C

### Review: US Response to Disasters and Public Health Emergencies

Taken: May 24, 2012, in-person

The objectives of this course are to (1) Provide an introduction to disasters and public health emergencies as conducted in the United States with emphasis on medical response, (2) describe efforts to provide framework and order before, during, and after emergencies and disasters, (3) increase understanding and empathy with those affected, first responders, incident commanders, and administrators, and (4) increase knowledge of where information specialists might fit into the US framework for disaster/emergency response.

This course supported the following knowledge, skills, and attitudes outcomes of the disaster information training program (rev. 4.26.12), with the strongest emphasis on those in bold:

- **Understand the disaster and emergency response infrastructure**
- **Know information sources and services that will support Core Competencies for Disaster Medicine and Public Health**
- Be able to locate and use disaster and emergency information resources
- Recognize librarians have a valuable role in the emergency/disaster response sector
- Feel confident that they can support the disaster and emergency response community
- **Participants will empathize with emergency responders' experiences in disasters**

The course began with an overview of basic terminology relating to disaster management, the U.S. Government agencies with disaster or emergency response responsibilities and their reporting structures, and legislation related to emergency management. This information is foundational and it is important to see how the organizations fit together, but I found it difficult to digest this information as quickly as it was presented. Perhaps the instructors could consider streamlining this part to the most essential elements with handouts for participants' reference. Or, if the instructors consider this to be an indispensable component, they could incorporate a short hands-on activity.

The next part of the class described the Incident Command System, the National Incident Management System, the Hospital Incident Command System, and the National Response Framework. I was glad to see that terminology and concepts from the two online FEMA courses were integrated in this course. I think the way the instructors used this material would have worked for both those who had and those who had not taken the FEMA courses. It certainly helped to get a clearer picture of the agencies involved in responses and their respective roles. However, I still feel that I won't truly understand these systems unless I participate in a drill or become more involved in the disaster response community.

Participants had the opportunity to assess what they had learned with a pre-test/post-test and questions interspersed throughout enabled both self-assessment and added an element of interactivity with the use of the audience response system. The audience response system allows the instructors to pose a question and have the audience use a remote to respond. The participants' answers are tallied and displayed (in aggregate) in real time. In the introductions,

participants reflected a strong interest in the course because of past experience, current involvement in disaster/emergency response planning or committees, or a desire to take a role in preparedness and response efforts. During the course, several participants related relevant anecdotes and were able to discuss ideas from an experienced perspective, which I think helped lend authenticity to the class. Those who did not have experience in disasters were able to better see how the enormous amount of information presented could be applicable. The examples of Hurricane Katrina and the Haiti Earthquake helped demonstrate the elements of response and the types of information that might be needed and provided by information professionals.

I think this course is important as part of the basics because it ties the information sources and librarian roles to the larger context of disaster response and gives context for the FEMA courses.

## Appendix D

### Review: Information Roles in Disaster Management

Taken: May 24, 2012, in-person

The objectives of this course were to enable participants to (1) define a disaster, (2) classify disasters into two distinct types, (3) name three stages of the disaster management cycle, (4) identify members of the disaster workforce, (5) articulate how librarians historically viewed their roles in disasters, (6) recognize roles librarians have played in disasters, (7) identify professional roles for librarians during all stages of the disaster management cycle, and (8) present librarian skills to members of the disaster workforce. These objectives are achieved by the content of the course in both the presentation and the exercises.

This course supported the following knowledge, skills, and attitudes outcomes of the disaster information training program (rev. 4.26.12), with the strongest emphasis on those in bold:

- Understand the disaster and emergency response infrastructure
- Know information sources and services that will support Core Competencies for Disaster Medicine and Public Health
- Participants will know the activities related to three distinct phases of disaster management: preparedness and risk reduction, response, and mitigation.
- Be able to locate and use disaster and emergency information resources
- **Recognize librarians have a valuable role in the emergency/disaster response sector**
- **Feel confident that they can support the disaster and emergency response community**
- Participants will empathize with emergency responders' experiences in disasters

This course was highly interactive, with opportunities for participants to reflect on their own communities and to work in groups to discuss potential actions before and during an incident. The activities were a major success of this course; they allowed participants to assess the potential hazards of their regions, identify roles for librarians in all phases of disaster management, and apply what was learned in this and other courses to a realistic scenario. The course discussions and exercises were enhanced by participants who were able to draw on their own experiences in dealing with hazards and disasters. Participants were able to assess their ability to recall information with an informal quiz and were able to apply new knowledge in an extended group tabletop activity. The tabletop activity was especially helpful because it is the type of disaster or emergency response activity librarians could expect to be involved in in their own institutions or communities. The only change I might suggest is to allow a little more time for discussion of the activities and to include a bit more content on librarian roles in the recovery phase.

Although there is enough information in the course for someone to gain from it without having taken the other courses, I think this course was a great way to review and synthesize concepts learned in the other basics courses. The other courses were fresh in my mind because I had taken them recently, and I found myself applying information from them, especially the

disaster basics and the FEMA National Incident Management System classes. The scenarios demonstrated to me that through this and the other courses I had learned about resources and systems in disaster response to be able to play an important role in supporting emergency and disaster response. If I had taken this as the first course, I think it would do more to spark my interest in taking more classes than it would to make me feel prepared to help in the disaster management cycle.

The course concluded with the instructor asking participants to complete a written exercise in which they resolved to complete activities in the coming months in preparation for or in response to a disaster. This was a bit difficult for me, not knowing where I might be at that time, but I still found that there were a few simple things I could do. I felt very motivated to continue to learn about what actions I could take to be helpful at my next institution and community. The written exercise made me feel a bit more accountable to accomplish these activities. I think if I were coming to the classes as librarian from a particular institution with no experience in this realm, I might have thought of a number of ways to be involved but feel unsure as to where to begin. I completed this class as the last of the five basics classes and I thoroughly enjoyed the series. I left feeling like I had learned quite a bit, but still feel like I have so much to learn.

## Appendix E

### FEMA Courses Content Overview

#### *FEMA IS-100: Introduction to Incident Command System*

*Overview* (from FEMA): “ICS 100, Introduction to the Incident Command System, introduces the Incident Command System (ICS) and provides the foundation for higher level ICS training. This course describes the history, features and principles, and organizational structure of the Incident Command System. It also explains the relationship between ICS and the National Incident Management System (NIMS).“

#### *Lesson 1: Course Welcome & ICS Overview*

Describes the ICS and what it is used for, how it originated, and how it relates to NIMS. Describes the ICS as built on best practices that allow for better accountability, communications, planning, and organization.

#### *Lesson 2: ICS Features and Principles*

Describes principles of ICS including standardization of terminology, chain of command, management by objectives and an incident action plan, employing a manageable span of control, and resource and facilities management. Discusses the importance of using plain English and avoiding codes or acronyms. Teaches terminology for ICS facilities, such as base, camp, helibase, incident command post and staging areas as well as the map symbols used for these facilities.

#### *Lesson 3: Incident Commander and Command Staff Functions*

Describes the roles and responsibilities of the five major management functions including: command, operations, planning, logistics, and finance and administration. Further describes the roles of command staff including safety officer, public information officer and liaison officer.

#### *Lesson 4: General Staff Functions*

Provides an overview of the organization and titles of supervisory roles in ICS and reviews the organization components (section, division, group, branch, task force and strike team). Supplies additional detail on the roles and duties of the four ICS sections (operations, planning, logistics, and finance and administration). Gives examples of groups that may be under each branch .

#### *Lesson 5: Unified Command*

This lesson describes how and why the incident commanders from different agencies work together. Briefly describes the role of an Emergency Operations Center and Joint Information Center.

## ***FEMA IS-700a: National Incident Management System: An Introduction***

*Overview* (from FEMA): “This course introduces and overviews the National Incident Management System (NIMS). NIMS provides a consistent nationwide template to enable all government, private-sector, and nongovernmental organizations to work together during domestic incidents.”

### ***Lesson 1: Understanding NIMS***

Explains the main concepts of NIMS, including how it came into being and that it is larger than the Incident Command Structure. It includes preparedness, communications and information management, resource management, command and management, and ongoing management and maintenance. The standardized procedures of NIMS enable coordination and allow it to be scalable for incidents of different types and size.

### ***Lesson 2: NIMS Preparedness***

Provides a summary of the preparedness component of NIMS including planning, procedures and protocols, training and exercises, personnel qualification and certification, and equipment certification. Describes the roles of elected and appointed officials as well as the role of individuals, non-governmental organizations, and the private sector in the preparedness cycle. Explains types of mutual aid agreements and assistance agreements. Discusses common procedural documents that are part of planning, such as standard operating procedures manual, a field operations guide, a mobilization guide, and a job aid. Also includes specific activities that might be part of mitigation efforts such as mapping, creating evacuation routes, implementing a vital records program, and public education.

### ***Lesson 3: NIMS Communications and Information Management***

Discusses the importance of communications systems being interoperable, reliable, portable, scalable, resilient and redundant and defines these terms. Planning for communication should include procedures that identify what information is needed and can be shared, who has and needs the information, and how the information will flow. Gives examples of incident information that can be useful, such as analytical data and GIS data.

### ***Lesson 4: NIMS Resource Management***

Resources include personnel, equipment, supplies and facilities and should be inventoried and categorized before and incident. Standard procedures are used to identify, acquire, and mobilize resources and these are briefly described in the lesson. Describes a seven-step cycle for managing resources. Uses a flow chart to describe the credentialing and tracking process.

### ***Lesson 5: NIMS Command and Management***

Briefly describes the Incident Command System, Multiagency Coordination Systems and Public Information. Summarizes the difference between command and coordination. Discusses components of the ICS system including common terminology, modular organization, management by objectives, chain of command, unified command, and other principles. Includes an overview of the Command Staff, General Staff and their roles and specific duties. Describes the Joint Information System and the Joint Information Center.

### ***Lesson 6: Additional NIMS Elements and Resources***

Describes the National Integration Center and its responsibilities, including administration and compliance, standards and credentialing, training and exercise support, and publication management.

## Appendix F

### Notes on FEMA Online Course Delivery

The FEMA course page provides a concise description of the course, a list of four course objectives, and the primary intended audience for this course. In this case, the target audience includes “individuals with emergency management responsibilities including prevention, preparedness, response, recovery and mitigation.” The course overview page does not describe the structure or logistics of the course, such as how many modules there will be or what type of technology or system requirements might be needed to complete the interactive course and exam.

Once the Interactive Web-based course is selected, it opens to an attractive welcome page (Figure 1).



Figure 1.

Welcome page of IS-700.A

The welcome page is followed by a course menu page that includes links to the six lessons of the course. This allows the user to come back to any of the modules to review or to complete the course in multiple sessions.

At the beginning of each lesson is a lesson overview that provides specific objectives for the lesson, an approximation of how long the unit will take to complete, a link to the summary of the lesson, and a guidepost to show what the user has completed and what is still to be done (Figure 2). I opened the keypoints documents, copied and saved them to a Word file. These files are available at the end of the course, which would have been helpful to know about before the lesson.

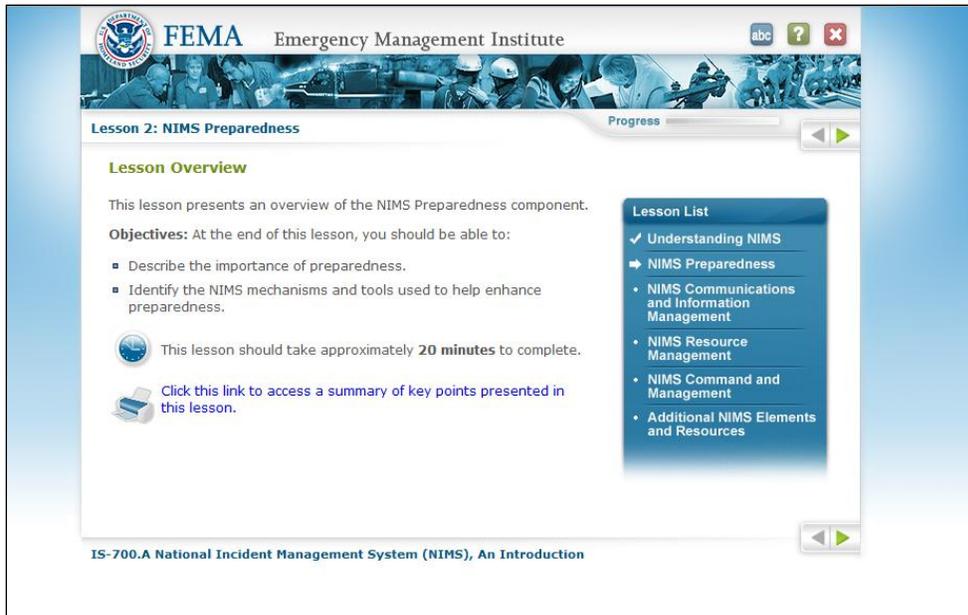


Figure 2. Lesson Overview

Each lesson begins with a video overview of the concepts covered in the unit. The videos are relatively short and engaging. Closed captioning and a transcription are available for accessibility. After the first video, the lesson contains instructions on navigating using the keyboard and tips for JAWS assistive technology users. This is a great addition, but would be better placed before the first video. The video controls are stop, play, and restart. This works well for the length of the video, but if the videos were longer than 3 minutes, I would recommend adding reverse and fast forward functions. The video size seems small relative to the size of the screen, and I didn't see an easy way to enlarge it. The video player does not include a progress bar to indicate the approximate length of the video, which I think would be a nice addition (Figure 3).



Figure 3. Video overview

Throughout the lesson, there is careful attention to avoid presenting too much content at one time and to balance the use of text with explanatory graphics or images (Figure 4). On slides where it would be desirable to present a large amount of content, it has been chunked into manageable pieces through the use of links and interactive content. For example, in Figure 5, users can click on any of the bulleted phrases on the left, to present different content on the right.

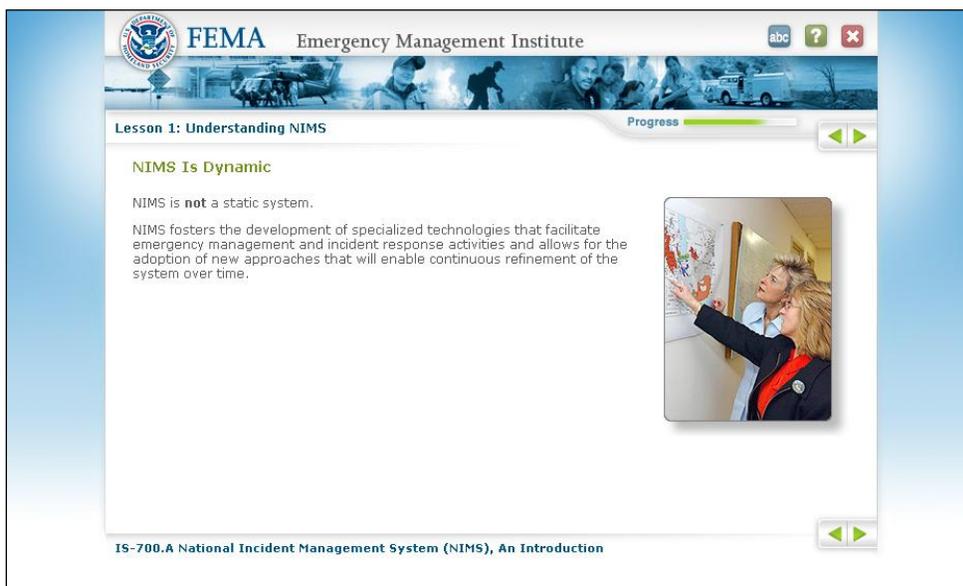


Figure 4. Lesson slide avoids too much content at once and balances text with a photo.

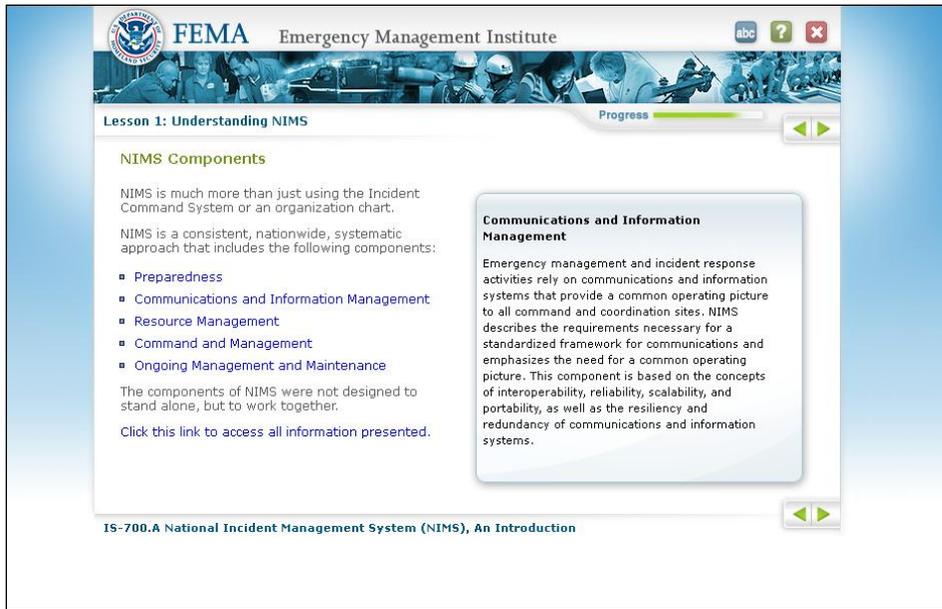


Figure 5. Interactive components of the lesson.

In addition to written content, there is also audio content. Each lesson included at least one slide in which users can listen to audio files of experts explaining how they use NIMS, or lessons they have learned related to the particular concept being presented (Figure 6). The audio is optional and the transcript is also available. I thought this was an effective way to add variety to the presentation and delivery of course concepts.



Figure 6. Slide with audio files.

At the end of each lesson there is an interactive knowledge review module for the user to review the main concepts of the section and test their knowledge. The questions may be multiple choice, yes/no, or matching. After submitting the answers, the course provides feedback on the answer choices (Figure 7). I think this is very helpful in reinforcing the most important aspects of the content.



Figure 7. Knowledge Review page

A second type of interactive assessment allows users to evaluate their organization's preparedness in specific areas (Figure 8). This could also be used as a sort of checklist to assess progress in these dimensions.

**FEMA** Emergency Management Institute

Lesson 3: NIMS Communications and Information Management

**Communications and Information Management: Preparedness Self-Assessment**

**Instructions:** Complete the following self-assessment to assess your jurisdiction's, agency's, or organization's communications and information management systems preparedness. Click on the Submit button when you are finished.

Communications and Information Management Systems/Plans	Yes	No
Comply with applicable national standards and are designed to be reliable, portable, scalable, resilient, and redundant.	<input checked="" type="radio"/>	<input type="radio"/>
Allow on-scene and off-scene personnel to have the same information about the incident, including the availability and location of resources and personnel, and the status of requests for assistance.	<input checked="" type="radio"/>	<input type="radio"/>
Specify information will flow among all stakeholders (including the private sector, critical infrastructure owners and operators, and nongovernmental organizations).	<input checked="" type="radio"/>	<input type="radio"/>
Set policies and procedures for coordination and release of information to the public and media.	<input checked="" type="radio"/>	<input type="radio"/>
Designate the communications systems and platforms that will be used (including technical parameters of all equipment and systems).	<input checked="" type="radio"/>	<input type="radio"/>
Establish protocols for communications that require the use of plain language (and identify exceptions when specialized encryption and tactical language may be used).	<input checked="" type="radio"/>	<input type="radio"/>
Identify procedures and protocols needed to ensure operational and information security.	<input checked="" type="radio"/>	<input type="radio"/>
Specify interoperability and information-sharing arrangements in mutual aid agreements and assistance agreements.	<input checked="" type="radio"/>	<input type="radio"/>
Include periodic training and exercises to ensure that personnel capabilities and limitations of communications plans and systems are addressed before an incident.	<input checked="" type="radio"/>	<input type="radio"/>

Submit

Figure 8. Self-assessment

Throughout the lesson, the material is presented on a consistent template, and users can find a glossary, help button, and progress bar on each page. The variety of modalities for presenting the material, including videos, interactive quizzes, the audio “Voices of Experience,” allow for user engagement with the material and serve to make it more interesting.

## Appendix G

MLA Certificate of completion for Basic Level Disaster Information Specialist Program

