Many incidents, whether major disasters or minor accidents, often require a coordinated response from a variety of agencies along with an established system of command and control. The Incident Command System (ICS) was created to be used at the scene of emergencies and has become a model tool for command, control, and coordination of an effective emergency response. ICS applies leadership and business principles to emergency response command to improve efficiency and effectiveness. The ICS is designed to organize people and resources and to activate necessary services during an emergency response while providing an easily recognizable and accepted organizational structure that can be used for a variety of incidents. Overall, the ICS provides a means to coordinate the efforts of individual agencies as they work toward protecting life, property, and the environment—all while ensuring the efficient, safe use of resources.

Federal law requires the use of ICS for response to hazardous materials (HazMat) incidents. In fact, many states are adopting ICS as their standard system for responding to all incidents. ICS is also promoted by national organizations, such as the Federal Emergency Management Agency (FEMA) and the National Wildfire Coordinating Group, and has been adopted by the National Fire Academy as its standard for incident response. In addition, the ICS is endorsed by the American Public Works Association and the International Association of Chiefs of Police. It was also included in the National Fire Protection Association's (NFPA) 1995 Recommended Practice for Disaster Management (NFPA 1600) and is also a part of the National Interagency Incident Management System (NIIMS).

**HISTORICAL PERSPECTIVE**

In the fall of 1970, Southern California was devastated by a number of wildland fires that burned more than 6 million acres. After 13 days, 772 structures and 16 lives were reported lost. In a report on the overall emergency response to this disaster, numerous coordination problems were identified. Consequently, Congress funded a consortium of state, county, and city fire departments, led by the U.S. Forest Service, to investigate and address these problem areas. This consortium was known as the Firefighting Resources of California Organized for Potential Emergencies (FIRESCOPE). The consortium identified several recurring problems involving multiagency responses, including nonstandard terminology, nonintegrated communications, lack of consolidated action plans for designated facilities, and an inability to expand and contract as required by the situation. Efforts by FIRESCOPE to address these problems led to the development of the original ICS model for incident management.

ICS later evolved into a system that is now essentially an “all-hazards” tool appropriate for all types of fire and nonfire emergencies. Much of the success of ICS can be attributed to its flexible yet standardized organizational structure and set of procedures. Not surprisingly, users of the ICS have found it to be useful and widely adaptable in a variety of large-scale emergencies and incidents. Over the years, the original FIRESCOPE ICS has been modified and adapted in numerous ways by many, resulting in a number of variant systems. These variants may indeed be easier to use, but their application in large-scale incidents, such as earthquakes and floods, often falls short when compared with the original FIRESCOPE ICS.

Individual communities often have slightly different approaches toward emergency planning and response. Coordinating various communities during a large-scale incident can be complicated by existing differences. Again, ICS use has evolved by incorporating new emergency management concepts into the municipal Emergency Operations Center (EOC) to allow for an easier application of the original ICS model. As a result, more local governments are using the ICS to organize and manage their emergency responses. On a different scale, several hospital models exist. However, an increasingly popular configuration is the Hospital Emergency Incident Command System (HEICS).

In 1987, the Hospital Council of Northern California completed work on an adaptation of the ICS to hospital emergency response functions. In a publication entitled Earthquake Preparedness Guidelines for Hospitals, ICS principles were used in a system intended to unify hospitals with other emergency responders. That document in particular served as a
cornerstone in the development of the original HEICS, written by Orange County (Calif.) Emergency Medical Services in 1991. Since then, there have been three editions of HEICS; however, all original attributes, steeped in ICS basic principles, remain as before. HEICS is discussed later in the chapter.

CURRENT PRACTICE

No disaster or emergency is ever the same. Likewise, no one emergency management tool is perfect for all types of incidents. With this in mind, it is not surprising that the major desirable factor in an effective emergency management tool is its flexibility—its ability to be modified to meet the needs of different circumstances without losing compatibility with the entities involved. It also must be effective regardless of the size of incident. Some fire departments use the ICS in nearly every response.5,6 In so doing, these departments become more familiar with its application. Users become more comfortable with the system, and when applying it in its larger scope during a larger incident, a resource-intensive emergency becomes relatively simpler.

The original ICS organization is built around five major components: command, planning, operations, logistics, and finance/administration (Fig. 30-1).8–10

These five components are present at every incident—from a routine emergency to a major disaster response. In small-scale incidents, these five major components may be managed by the incident commander (IC) alone. In larger-scale incidents, it may become necessary to set up each component separately, with a leader for each component (a section chief) reporting directly to the IC. All incidents, regardless of size or complexity, will have an IC who is ultimately responsible for the execution of each of these five basic ICS activities. The IC is able to expand or contract the ICS organization as required by the situation.

Command Function

The command function is under the immediate authority of the IC. Responsibilities of the IC include the following8–10:

- Establishing command and developing an appropriate organizational structure
- Establishing the incident command post (ICP), where primary command functions are executed
- Developing and implementing the incident action plan (IAP)
- Preserving life and property
- Managing resources, including personnel
- Establishing and supporting effective communications with outside agencies (this includes the EOC, when it is activated)
- Ensuring responder and public safety
- Maintaining accountability for task accomplishment
- Authorizing the release of information to the media
- Keeping track of incident finances

As the incident grows in complexity, the IC may find it necessary to delegate authority for performing some of these activities. When such expansion of the command function organizational structure is required, the IC can establish the following command staff positions (Fig. 30-2)8–10:

- The information officer deals with the media, coordinating the release of information, alongside the public affairs office at the EOC.
- The safety officer assesses and monitors safety conditions and develops plans to ensure personnel safety.
- The liaison officer is the on-scene contact person for all additional agencies involved in the incident response.

In addition, each of these positions may have a number of subordinates, depending on the size and complexity of the incident.

By delegating the authority to make decisions regarding problems in these three specific areas of incident management, the IC’s effectiveness can be improved.

When deciding to expand or contract the ICS organization, the IC should consider the following three major incident principles4,5,11:

- Life safety
- Incident stability
- Property conservation

The first priority is always the safety of the public and all incident responders. Second, the IC must consider the stability of the incident when developing an efficient plan that maximizes the response effort and efficiently uses the resources available. Third, the IC is responsible for minimizing property damage while implementing the IAP.

After careful consideration of these principles and more, the complexity of the incident may cause the IC to activate any one or all additional general staff sections. Again, these include planning, operations, logistics, and finance/administration. Each section chief, in turn, can expand internally as needed. Finally, it should be reiterated that the complexity of the ICS organizational structure is dictated by the complexity of the incident—not the size, which is based on the geographical area or the number of resources involved.
Planning Section
In small-scale incidents, the IC often assumes the responsibility of planning. However, when the complexity of the incident is of a larger scale, the planning section is activated by the IC. The planning section serves to continually evaluate the incident situation. Responsibilities of the planning section can be described by a number of functional units (Box 30-1).8–10
The situation unit collects incident information, processes it, and disseminates reports to all sections and agencies involved. The resources unit is responsible for accounting for all personnel and equipment, and the documentation unit maintains incident records. The damage assessment unit appraises property damages. A special needs population unit devises plans to protect those with special needs. A technical specialist and/or volunteers unit enables the response to access persons with specialized skills and knowledge related to the incident at hand. Finally, the demobilization unit organizes the de-escalation of all resources when an incident response comes to a close.

It should also be noted that a major responsibility of this particular general staff section is the creation of the IAP. The IAP defines incident response activities and which resources are to be used over a clearly specified period.1,4,8,10 Overall, the planning section has the critical task of anticipating the problems and needs of other ICS general sections and providing incident status updates to the IC.

Operations Section
The operations section is responsible for implementing the IAP developed by the planning section. The operations section chief has the primary responsibility of coordinating operations section activities in accordance with the IAP. Other responsibilities of the operations section chief include determining required resources and the organizational structure within the section, informing the IC of situation and resource status within the section, and assisting the IC in creating objectives for the incident.8–10

The responsibilities of the operations section as a whole take place on the actual scene of the incident. These activities include, but are not limited to, triage, rescue, emergency medical services (EMS), firefighting, and disaster relief services for victims (e.g., shelter).8–10 These branches, as they are called in ICS, may be broken down further into divisions or groups, as required by the complexity of the incident. The operations section chief decides whether the formation of these branches is necessary. It should also be noted that during an active response, the operations section is the only general staff section that has direct contact with the public. All other activities under the control of the remaining general staff sections are in support of the operations section.

Logistics Section
The logistics section functions to support all incident responders. This section is responsible for organizing the necessary facilities, personnel, and materials, including equipment, as determined by the operations section and requested through the IC. Like the planning section, the logistics section can be described by a number of functional units (Box 30-2).8–10

Remembering again that every general staff section can be expanded or contracted as needed, the logistics section can include a communications unit responsible for devising a communications plan and maintaining the lines of communications between ICS general staff sections and outside agencies. An information systems unit establishes and maintains the technology necessary to disseminate situation information to emergency workers. The medical unit in the logistics section provides care for incident responders, not civilian victims—civilian victims are cared for by EMS organized by the operations section. A food unit supplies food and water to emergency workers. A supply unit orders personnel and supplies for emergency workers. A donated goods unit manages the inventory of donated goods, which historically can be exceedingly large in disaster responses.12 Finally, a facilities unit creates and maintains any necessary facilities used by emergency workers.
Finance/Administration Section

Simply stated, the finance/administration section tracks incident costs. Careful records of all financial operations are necessary to ensure adequate reimbursement of costs. This is especially important when the incident is of such a large scale that a presidential declaration has been made. This general staff section has four key activities, which are assigned to functional units (Box 30-3).8–10

The time unit records all personnel time during a response. A procurement unit handles all contractual paperwork (e.g., for equipment). A compensation or claims unit handles injury and damage claims. A cost unit makes cost-saving recommendations. Of note, these activities usually occur within the EOC, which is discussed later in the chapter.

CONCEPT AND PRINCIPLES OF THE ICS

ICS concepts and principles have been time-tested and proven in all levels of governmental agencies and industry. To ensure that all persons who may become involved in an incident are familiar with ICS principles, ICS training is available.8–10 There are a number of core principles included in the ICS structure (Box 30-4).4

Common Terminology

Whenever an incident response involves more than one agency, common terminology within the emergency management system becomes a critical feature. Clearly, confusion and inefficiency can result when agencies have slightly different terms for major functions, facilities, personnel, equipment, and/or units. In ICS, terminology for all of these components has been predesignated and standardized.4,8,10

Infrequently, multiple incidents occur at the same time within a common jurisdiction. In such cases, the IC will assign his or her incident a unique name.5 This is particularly useful when a radio frequency must be shared for multiple incidents. In addition, inherent to this concept of common terminology is the guideline that plain English should be used in radio transmissions (i.e., without “ten” codes or agency-specific codes).

Modular Organization

The principle of modular organization is exemplified in Fig. 30-1. It develops as the first-arriving officer (who becomes the IC) assesses the complexity of the incident and activates other functional areas as needed. For example, in ICS this means activating the planning section to assist in the creation of the IAP for a larger-scale incident.

Integrated Communications

Integrated communications refers to a system that establishes a single communications plan with a set of standard protocols that uses common terminology.4,8,10 The complexity of coordinating a hospital’s emergency response with the surrounding community illustrates the importance of a universally accepted communications system.

With regard to hospital and emergency department (ED) preparedness, internal and external communications are vital. Phone numbers for the Centers for Disease Control and Prevention, the Federal Bureau of Investigations, and the local public health department should be kept in the ED and laboratory.13 Unimpeded contact with agencies is important when reporting a possible bioterrorism attack, activating epidemiological surveillance, or requesting antibiotics or other supplies. Moreover, communications are needed to access assets such as Metropolitan Medical Response Teams, disaster medical assistance teams, and the National Guard Weapons of Mass Destruction-Civil Support Teams.14

Unity of Command

When attempting to establish a common set of incident strategies and tasks, it helps when multiple agencies and all personnel involved report to one designated person—the IC. This concept of unified command does not mean that any single agency gives up specific authority or accountability. All involved agencies contribute to the command process under the concept of unified command. Consequently, this allows the incident to function under a single IAP.4,8,10

In addition, it is recommended that agency leaders regularly communicate before the onset of any large-scale emergency in an effort to get to know one another. Not surprisingly, such personal familiarity fosters cooperation among agencies that work together during any emergency response.

Consolidated Incident Action Plan

A complex incident response benefits from a consolidated IAP. By detailing operational objectives and support activities, order can be established amidst the chaos.
that often surrounds complex incident responses. The IC decides whether a written IAP is necessary. At the minimum, ICS requires a written IAP whenever several agencies pool resources or multiple jurisdictions are involved. When written, an IAP may include a number of forms as attachments (e.g., traffic plan, safety plan, communications plan). Overall, a written plan is preferred over an oral plan because it protects against liability suits and provides necessary documentation when applying for state and federal assistance. IAPs should be devised around a timeframe called an operational period. By using such operational periods, measurable goals are more easily achieved as response initiatives are focused for a shorter period, rather than over an undetermined length of time. Operational periods can be of various lengths but are usually no longer than 12 hours. The IC determines the length of the operational period after careful consideration of the incident complexity and size.

Manageable Span of Control

In ICS, manageable span of control is a concept that serves to control the number of resources that operate under an organizational structure to ensure efficiency. In particular, it demands that the number of individuals under one supervisor optimizes the effectiveness of the organization. Often the span of control of a supervisor averages five resources or individuals.

Designated Incident Facilities

At the minimum, there should be a designated facility where the IC, the command staff, and the general staff can collectively manage incident operations—the EOC. Staging areas are also required to prepare and organize all necessary resources before their deployment. Other facilities may be deemed necessary and can be assigned in a large variety of geographical locations.

The Emergency Operations Center

The EOC is where critical members of the ICS structure gather to collectively manage overall incident operations. Most jurisdictions maintain an EOC as part of their emergency preparedness program. During larger-scale incidents, the EOC may take on additional functions and will often extend its reach in several ways. For example, a forward command center may be established near the disaster area. In addition, a logistics center and/or EMS area can be established. However, with today’s technology, the EOC itself can be located nearly anywhere.

Comprehensive Resources Management

The principle of comprehensive resources management serves to maximize resource use by consolidating control of resources. In doing this, there is more accountability, and freelancing is reduced. It is important to remember that personnel is a critical resource, and just like all resources, it can be assigned a status condition. For instance, “assigned” resources are active in an incident response, “available” resources are in the staging area awaiting assignment, and “out-of-service” resources are unavailable for assignment.

HOSPITAL EMERGENCY INCIDENT COMMAND SYSTEM

The HEICS is an emergency management system for hospitals and is made up of positions on an organizational chart (Fig. 30-3). Each position represented in Fig. 30-3 has a specific mission, and each position has an individual checklist designed to direct the assigned individual in emergency response tasks. These checklists are called job action sheets. In addition, the HEICS design includes standardized forms to simplify and enhance the overall system. Every job action sheet begins with the job title, the supervising officer, where the location of the section operations center is, and a mission statement to define the position responsibility.

HEICS core attributes, some of which are based on basic ICS principles, include the following:

- HEICS provides a manageable scope of supervision for all personnel, similar to the ICS principle of manageable span of control.
- HEICS is a flexible system by virtue of its “modular organization”—another core ICS principle. It can be expanded or scaled back to meet the demands of a variety of crises, regardless of complexity.
- Job action sheets are position descriptions that have a prioritized list of emergency response tasks. They also serve to remind personnel of the standard established lines of reporting.
- The job action sheets and the associated forms promote documentation of details and the overall response to the crisis. Such comprehensive documentation proves essential when trying to recuperate expenses and reduce liability.

The HEICS organizational chart (see Fig. 30-3) imposes structure and understandable lines of authority within the hospital system. Just as in the original ICS, HEICS incorporates four sections of command under the overall leadership of an emergency incident commander. Each of the four sections—planning, operations, logistics, and finance—has a chief, appointed by the emergency incident commander, who is responsible for his or her section and the resources directly involved.

SUMMARY

The ICS is capable of handling both small, routine operations and very large incidents that cover many square miles or involve multiple communities or states. Although many incidents will not require the activation of any of the four general staff sections, others will require some or all of the sections to be established.

*For more information about HEICS, contact the California Emergency Medical Services Authority at (916) 322-4336, or visit its Web site at http://www.emsa.cahwnet.gov/.
FIGURE 30–3. The Hospital Emergency Incident Command System organizational chart. (Reproduced with permission from State of California Emergency Medical Services Authority.)
ICS is a simple yet detailed system. It is easily grasped but takes practice and familiarity to use it to its full potential. In an effort to promote and continually enhance the principles of ICS, training is offered through the FEMA, the Emergency Management Institute, and other like agencies. Through such courses or through independent study, one can achieve an understanding of the details of ICS and HEICS, which are far beyond the scope of this chapter. (For example, current ICS training and even hospital-based disaster plans such as HEICS now include standardized forms that simplify and enhance the implementation of these flexible systems.)

REFERENCES

10. FIRESCOPE. Available at: http://www.firescope.org.